

506
PL
1867/68

ANNUAL REPORT
AND
TRANSACTIONS
OF THE
PLYMOUTH INSTITUTION
AND
Debon and Cornwall
NATURAL HISTORY SOCIETY.

VOLUME III. PART I.
1867-68.

LIBRARY OF THE
FEB 14 1969
UNIVERSITY OF ILLINOIS

PLYMOUTH:
ISAIAH W. N. KEYS, 52, BEDFORD STREET.
1868.

MAR 3 1969



ANNUAL REPORT
AND
TRANSACTIONS
OF THE
PLYMOUTH INSTITUTION
AND
Devon and Cornwall
NATURAL HISTORY SOCIETY.

VOLUME III.
1867-68.

PLYMOUTH:
ISAIAH W. N. KEYS, 52, BEDFORD STREET.
1868.

Trustees.

JOSEPH COLLIER COOKWORTHY, M.D.

PETER HOLMES, D.D.

ALFRED ROOKER.

JOHN NICHOLAS BENNETT.

CHARLES SPENCE BATE, F.R.S., F.L.S.

ROBERT OXLAND.

HAMILTON WHITEFORD.

OFFICERS OF THE INSTITUTION.

SESSION 1867-8.

President.

J. HINE.

Vice-Presidents.

REV. J. ERSKINE RISK, M.A.

C. SPENCE BATE, F.R.S., F.L.S.

A. P. PROWSE.

J. N. BENNETT.

Treasurers.

J. L. COLLEY.

J. BROOKING ROWE, F.L.S.

Secretaries.

J. SHELLY.

T. R. A. BRIGGS.

Curators.

Library.—E. G. BENNETT.

Building.—W. GAGE TWEEDY, M.A.

Apparatus.—J. N. HEARDER, F.C.S.

Fine Arts.—P. MITCHELL.

Antiquities.—REV. F. E. ANTHONY, M.A.

Museum Curators.

Zoology.—

Geology.—T. HARPER, M.R.C.S.

Botany.—I. W. N. KEYS.

HONORARY MEMBERS.

Adams, J. C., F.R.A.S.	Gibbs, F.W., C.B., 5, Mount Street,
Bowring, Sir John, LL.D., F.R.S., F.L.S., Exeter	Grosvenor Square, London
Coleridge, Rev. Derwent	Lubbock, Sir John, F.R.S., F.L.S.
Cookworthy, J. C., M.D., Plymouth	Pinsent, Rev. J., S. Erth
Daubeny, Dr., F.R.S., Torquay	Scrivener, Rev. F., S. Gerrans
Fox, R. W., F.R.S., Falmouth	Tregelles, S. P., LL.D., Plymouth
Froude, W., M.A., C.E., Paignton	Vivian, Edward, M.A., Torquay
Fuge, J. H., Plymouth	Walker, Capt., R.N., Plymouth
	Wightwick, George, Clifton

LIFE MEMBERS.

Acland, Sir Thomas Dyke, Bart., Killerton	Alger, W. H., Seaton Terrace, Plymouth
Alger, J., Ford Park	Bartlett, G., Plymouth
	White, James, M.P., London

CORRESPONDING MEMBERS.

Barham, C., M.D., Truro	Nelson, Lieut.-Col., R.E.
Blewett, Octavian, London	Ormerod, G. W., M.A., F.G.S., Chagford
Boase, H., M.D., Truro	Peach, W., Wick, N.B.
Bowerbank, J. S., LL.D., F.R.S., F.L.S., London	Pengelly, W., F.R.S., F.G.S., Torquay
Couch, Jonathan, F.L.S., Polperro	Prideaux, Charles, Kingsbridge
Harding, Col., Heavitree, Exeter	Rodd, E. Hearle, Penzance
Hennah, Rev. W., Isle of Wight	Vicary, W., F.G.S., Exeter
Henwood, W. J., F.R.S.	Towson, J. T., Liverpool
Letheby, Henry, M.B., Ph. D., F.L.S., F.C.S.	Welsford, Henry
McAdam, Col., R.M.	

LECTURING MEMBERS.

Anthony, Rev. F. E., M.A., Hill- Park Crescent	Cater, Samuel, Headlands
Bate, C. Spence, F.R.S., F.L.S., Mulgrave Place	Charlton, Rev. J. M., M.A., Western College
Balkwill, Francis H., Old Town St.	Coffin, T. W., jun., 5, Alfred Place
Bennett, E. G., Athenæum Street	Colley, J. L., Portland Square
Bennett, J. N., Windsor Villas	Collier, Sir R. P., M.P.
Bickers, Dr., Alfred Street	Collier, W. F., Horrabridge
Bishop, R., Whimble Street	Collier, R., Eton Place
Boswarva, J., Bedford Street	Edmonds, J., Hoe Street
Briggs, T. R. A., 4, Portland Square	Forbes, Charles, M.D.
Carkeet, J. M., St. Andrew's Place	Harper, T., M.R.C.S., Park Street
	Harpley, Rev. W., M.A., F.C.P.S.

LECTURING MEMBERS (*continued*).

Header, J. N., F.C.S., Buckwell Street
 Hearle, G. W., Devonport
 Hine, James, Mulgrave Place
 Hingston, C. Albert, M.D., B. Sc.,
 3, Sussex Terrace
 Holmes, Rev. Peter, D.D., F.R.A.S.,
 Mannamead

Jago, George, Cobourg Street

Keys, I. W. N., Bedford Street

Mann, John Pidsley, Saltash
 Mitchell, P., Hill Park Villas
 Moore, W. F., Friary
 Morrison, W., M.P., Malham Tarn,
 Leeds, Yorkshire
 Mount Edgecombe, The Right Hon.
 the Earl of

Oxland, R., Compton

Prowse, A. P., Mannamead

Reading, J. J., M.E.S.
 Risk, Rev. J. Erskine, M.A., Princess Square
 Rooker, Alfred, Mount View
 Rowe, J. Brooking, F.L.S., Lockyer Street
 Rowse, S. W., Princess Square

Saunders, William, 'Morning News' Office

Shelly, J., Frankfort Chambers
 Stewart, Charles, Princess Square
 Symes, Rev. Colmer Boaz, B.A., Clifton Place
 Szyrma, Rev. W. S. L., M.A., Pensilva, near Liskeard Square, Eliot, Frankfort Street
 Slater, D., M.A., Braidwood Terrace

Tweedy, W. Gage, M.A., 19, Torrington Place

Weekes, S., S. James Place
 Weymouth, R. F., M.A., Portland Villas

"The property of the Institution, the privileges of voting, electing Members, managing the concerns, and enacting laws, are vested exclusively in the Lecturing Members."—*Law 2.*

ASSOCIATES.

Adkins, J. E., Yealmpton

Bellamy, Rev. F., Devonport
 Bayly, J., Brunswick Terrace
 Bayly, Richard, Brunswick Terrace
 Bayly, Robert, Brunswick Terrace
 Bennett, W., M.A., Princess Square
 Bignell, George Carter, 8, Clarence Place, Stonehouse
 Birmingham, W., Whimble Street
 Brent, F., Clarendon Place
 Brown, G. H., Emma Place, Stonehouse
 Brown, H., North-Hill House
 Butler, G., Regent Street
 Bouillon, Mons., Princess Square

Cawse, Henry, Old Town Street
 Clark, W., 7, Clarendon Place
 Coles, S., Princess Square

Conway, R., George Street
 Elliott, E. D., Sugar Refinery
 Elliott, S., Trafalgar House
 Elliott, J., Trafalgar House

Feather, Henry, Bedford Street

Geldard, R. K., George Street
 Gibbons, E. Stanley, Treville Street
 Goulding, F. H., George Street

Holmes, E., 2, Arundel Crescent
 Harvey, W., 4, Kirkby Place
 Holberton, G. R. O., S. Andrew's Terrace
 Holberton, W., S. Andrew's Terrace
 Hubbard, A., Portland Square

James, W. C., 4, Portland Square
 James, E. H., 4, Portland Square

6 *Annual Report and Transactions of the Plymouth Institution.*

ASSOCIATES (*continued*).

Latimer, T., Frankfort Street
Littleton, J., M.B., Mulgrave Place
Lobb, C. F., Endsleigh Place
Luscombe, H. A., Clifton Place

Mark, George, George Street
Markwick, William, Mannamead
Merrifield, John, Gascoyne Place
Mitchell, T., Eton Place
Moore, W. V., Princess Square

Nicholson, —, Windsor Place

Parson, G., Bedford Terrace
Penson, James, Oxford Place
Plimsaul, J., Portland Villas
Pridham, George, James Place

Radford, Geo., Bedford Street
Rodda, R., 10, Windsor Terrace

Rundle, R., Valletort Villa, Ford
Park

Saunders, A., Union Street
Soltau, G. W., Efford
Square, William, M.R.C.S., Port-
land Square
Stephenson, G., Old Town Street

Thomas, Jenkin, Cornwall Street
Tucker, Geo. Luxmoore, Bedford
Terrace

Tucker, Samuel, Union Street

Walder, Charles, C.E., Laira
Weekes, T. W., Windsor Terrace
Whipple, John, Mulgrave Place
Williamson, J., Athenæum Street
Windeatt, John, Brunswick Terrace
Woodhouse, H. B.S., Gibbon Street
Yabsley, J. W., Old Town Street

JUNIOR ASSOCIATES.

Header, W., Westwell Street

Jago, Charles, Cobourg Street

Searle, M., Bedford Street

SECRETARIES' REPORT.

1867-8.

Your Secretaries have to report that during the past session the following Lectures have been delivered:—

1867.

- | | | |
|---------|---|---------------------------|
| Oct. 3. | Inaugural Address | THE PRESIDENT. |
| „ 10. | The Precious Metals | Mr. R. OXLAND. |
| „ 17. | Recent Researches in Marine Zoology on the South Coast of Devon and Cornwall | „ C. SPENCE BATE, F.R.S. |
| „ 24. | “The Romaunt of the Knight de Coucy and the noble Ladye Fayel:” a MS. Poem, written in the Romance language, <i>circa</i> A.D. 1230 | Dr. BIKKERS. |
| „ 31. | On Extraordinary Agitations of the Sea, not produced by Winds or Tides: an unpublished paper, by Mr. Richard Edmonds. | |
| Nov. 7. | The History of Newspapers | Mr. W. SAUNDERS. |
| „ 14. | Good and Bad Building. Part II. | „ W. GAGE TWEEDY, M.A. |
| „ 21. | Specimens of a forthcoming Glossary of the Devonshire Dialect, with Notes and Queries thereon.. | „ J. SHELLY. |
| „ 28. | The Theory of Moral Freedom.... | Rev. J. M. CHARLTON, M.A. |
| Dec. 5. | | |
| „ 12. | Education | Mr. J. N. BENNETT. |
| „ 19. | On Life | Dr. C. ALBERT HINGSTON. |

8 *Annual Report and Transactions of the Plymouth Institution*

1868.

- | | | | |
|------|-----|---|----------------------------|
| Jan. | 2. | Conversazione | |
| „ | 9. | Houses of the Working Classes .. | THE PRESIDENT. |
| „ | 16. | The Study of Language | Rev. W. S. L. SZYRMA, M.A. |
| „ | 23. | Voltaic Electricity | Mr. J. N. HEARDER, F.C.S. |
| „ | 30. | The Effect of Soil on the Flora of
Plymouth | „ T. R. A. BEIGGS. |
| Feb. | 6. | On Natural and Circumstantial
Development of Languages..... | Dr. BIKKERS. |
| „ | 13. | The Pyrenees | Mr. A. ROOKER. |
| „ | 20. | A Review of Professor Tyndall's
Recent Investigations concerning
Sensitive Flames | „ J. N. HEARDER, F.C.S. |
| „ | 27. | Education of the People | „ JAGO. |
| Mar. | 5. | Ancient Tin Mines of Devon and
Cornwall: an unpublished paper,
by Mr. Richard Edmonds | |
| „ | 12. | Comte's Positive Philosophy..... | Rev. C. B. SYMES, B.A. |
| „ | 19. | Natal, and its Prospects as a British
Colony..... | Mr. S. W. ROWSE. |
| „ | 26. | Bentham's Theory of Legislation.. | „ R. COLLIER. |

Four lecturers were prevented from fulfilling their engagements, and three of the vacancies thus caused were supplied by other lecturers. On the 5th of December a discussion on Education was introduced by Mr. Prowse, who read a recent address by Mr. Robert Lowe, M.P.,—Sir John Bowring having been prevented by serious illness from giving a lecture which he had promised, and which he had entitled “Education: New Times, New Men, New Responsibilities.”

Mr. Bate's lecture on “Recent Researches in Marine Zoology,” Mr. Briggs's on “The Effect of Soil on the Flora of Plymouth,” Mr. Shelly's on “The Devonshire Dialect,” and two papers by Mr. Richard Edmonds, read by Mr. Bate, claim notice as being of local interest. It is hoped that at least one of Mr. Edmonds's papers may be published in the Transactions of the Society. On three evenings Education has been the subject of the lecture or

discussion. The other lectures have been of varied character, and, we believe, have not been inferior in regard to the ability displayed or the interest they excited to those which have been read before the Society in former years.

The attendance of members of the Institution has not been less numerous than in former years; and the discussions, always a distinguishing feature of the meetings of the Society, have been well sustained.

At the Anniversary Meeting, on the 1st May last, Mr. C. Spence Bate, F.R.S., gave some account of his discoveries respecting the Dentition of the Mole; and papers were read by the President and by Mr. Shelly.

As in former years the Society owes much to Mr. Philip Mitchell, the Curator of Fine Arts, for his efforts in bringing together a large collection of paintings at the Annual Conversazione in January. The pictures then exhibited were chiefly obtained from the collections of Dr. Yonge and Mr. William Eastlake, but many sketches and portfolios of drawings were contributed by local artists. In the winter the Monday Evening Fortnightly Meetings of members were revived, and at them the following papers were read:—

On some recent Researches in Constantine Bay, North Cornwall, by C. SPENCE BATE, F.R.S., F.L.S., who exhibited some bone pins, awls and knife, pottery, animal remains, and flint flakes, that he had found in a kjökken-mödding overlying an old raised beach.

On the Chemical Condition of certain local Building Materials, by R. OXLAND.

On a Porpoise and other Cetacea recently procured in the neighbourhood, and added to the Museum, by J. BROOKING ROWE.

In their last Report your Secretaries mentioned that the British Association had been invited to hold a meeting at Plymouth. We have now to report that an invitation having been sent to the Association by the City of Exeter, it was agreed to refer the claims of the two places to the last three Presidents of the Association

and in consequence of their decision the claim of Plymouth to the honour of the visit has been withdrawn in favour of Exeter. It is to be hoped that the Association may visit Devonshire at no very distant date.

We desire to draw the attention of the Society to the present condition of the Library. There are many volumes missing, and the books generally need re-arrangement and careful examination, as some of them are being injured by damp. A new Catalogue is in progress. During the past year the following works have been added to the Library:—

Mantissa Insectorum. Fabricius. 8vo.

Newman's Entomologist, vol. ii.

Uriconium. Anderson.

History of British Sponges. Johnson.

Birds of Devon. Tucker.

Wood's Conchological Index.

Miscellaneous Botanical Works of Dr. Robert Brown, vol. ii.

Ray Society.

Airy's Lectures on Astronomy.

On the Structure of the Shoulder Girdle and Sternum in the
Vertebrata. By Dr. Kitchen Parker.

Farrar on the Origin of Language.

Several Serials have been continued.

We would suggest to the Curators of the Society that their Reports might be made of greater and lasting value if they would watch for and record all facts that may come under their notice, and occurrences during the year, relating to the Natural History and Antiquities of the two counties. A kind of local Year Book of Facts might thus be formed, which, being published in the Transactions of [the Society, would be of great use, not only to present and future students of the Natural History and Antiquities

of the West of England, but also to observers in other parts of the country, who would be enabled to compare their own observations with those made in this neighbourhood.

We hope that Mr. Keys's "Flora of Devon and Cornwall" may be continued in this number of the Transactions, and that we may have a further instalment of Mr. Reading's Catalogue of Lepidoptera, in addition to Mr. Edmonds's paper already mentioned.

During the past year Mr. T. R. A. Briggs has collected in the neighbourhood of Plymouth two plants new to the county. They are *Barkhausia taraxacifolia* DC. and *Typha angustifolia*, L.

J. SHELLY.

T. R. ARCHER BRIGGS.

TREASURERS' REPORT.

1867-8.

Presented at the Annual Meeting, 2nd April, 1868.

IN presenting the Balance Sheet of the Plymouth Institution and Devon and Cornwall Natural History Society for the past year, your Treasurers regret to state that there has been a considerable falling off in the subscriptions, the number of members and associates who have paid being only 101. The amount received for the use of the Hall is also rather less than usual ; but two sums due from Societies, which will be received shortly, should be taken into consideration.

While the income has been thus lessened, the expenditure seems to have increased, some of the items being large. The payments for additions to the building, in which are included the balance due for the completion of the alteration of cases in the Museum, and the cost of the new arrangements for lighting the Hall amount to £39. 16s. 4d.; and the Conversaziones absorb no less than £16. 15s. 11d. There are many outstanding accounts, so that, although a balance is shown in favour of the Institution, the fact really is, that, if all the liabilities were discharged, the Society would be in debt to its Treasurers, who think it right to mention this that the Curators may be economical in their requirements during the coming year.

J. L. COLLEY.

J. BROOKING ROWE.

AN ACCOUNT OF THE EXPENDITURE AND INCOME OF The Plymouth Institution and Devon and Cornwall Natural History Society,

FOR THE YEAR ENDING 31st MARCH, 1868.

Gr.

Dr.

1867-68.		£. s. d.	1867-68.		£. s. d.
To Incidentals .. .. .	.. .. .	7 0 10	By Balance from last account .. .. .	.. .. .	69 10 10½
„ Repairs .. .. .	.. .. .	5 1 5	„ Admissions .. .. .	.. .. .	0 16 0
„ Printing .. .. .	.. .. .	14 12 0	„ Rental .. .. .	.. .. .	29 1 2
„ Lighting and Warming .. .. .	.. .. .	11 4 11	„ Subscriptions .. .. .	.. .. .	107 2 0
„ Rates, Taxes, and Insurance .. .. .	.. .. .	11 0 0	„ Petty Receipts .. .. .	.. .. .	1 0 0
„ Salaries .. .. .	.. .. .	18 5 6			
„ Conversaziones .. .. .	.. .. .	16 15 11½			
„ Additions to Building .. .. .	.. .. .	39 16 4			
„ Museum .. .. .	.. .. .	12 0 8			
„ Library .. .. .	.. .. .	16 4 3			
„ Balance .. .. .	.. .. .	55 8 2½			
		<u>£207 10 0½</u>			<u>£207 10 0½</u>

Audited and found correct, 1st April, 1868. C. SPENCE BATE, } Auditors.
J. BOSWARVA, }

ON THE
PHŒNICIAN TIN TRADE IN CORNWALL.

BY
RICHARD EDMONDS.

ON THE
PHŒNICIAN TIN TRADE IN CORNWALL.

WITH REMARKS ON THE GREAT IRRUPTION OF THE SEA IN THE ELEVENTH CENTURY, SAND-HILLOCKS, "RAISED BEACHES," THE CAUSEWAY BETWEEN MARAZION AND ST. MICHAEL'S MOUNT; AND ON THE ORIGIN OF THE NAMES MARAZION, MARKET-JEW, IKTIN, AND BRITAIN.

BY
RICHARD EDMONDS.

It has been immemorially believed in Cornwall that Mountsbay was, in prehistoric ages, the resort of the Phœnicians for tin; that St. Michael's Mount is the *Iktin* of Diodorus Siculus; and that Jews anciently were connected with the tin trade, and carried on tin mines in Cornwall. These facts have lately been questioned by writers of eminence, but are now established beyond the reach of future scepticism.

In the *Archæologia Cambrensis* for 1857, while Secretary for Cornwall to the *Cambrian Archæological Association*, I wrote several papers on the *Antiquities of the Land's-end District*, in which I stated that the tin so common in Palestine in the time of Moses was not dug from that land, but imported by the Tyrians from some remote islands known only to themselves, respecting which Herodotus, after acknowledging his ignorance of their situation, says "it is nevertheless certain that our tin is brought from those extreme regions."* These islands I also stated are now

* Beloe's Translation, i., p. 317.

allowed to be the British Islands, of which the only part ever distinguished for its export of tin is Cornwall. Descending to less ancient times, I quoted the well-known passage in Diodorus, referring to St. Michael's Mount under the name *Iktin*, as the port to which the tin in his time was carried, and from thence exported.

"The inhabitants of that extremity of Britain" (says he) "which is called *Belerion* (the Land's end) prepare the tin, working very skilfully the earth which produces it. The ground is rocky, but has in it earthy veins, the produce of which is wrought down, and melted, and purified. Then when they have cast it into the forms of *astragali* (αστράγαλων ῥυθμους) they carry it into a certain island adjoining Britain and called *Iktin* (ἐἰς την νήσον προκειμενην μὲν τῆς Βρεττανικῆς ὀνομαζομενην δε Ικτιν). For during the recess of the tide, the intervening space is left dry, and they carry over abundance of tin to this place in their carts. . . . * From hence, then, the traders purchase the tin of the natives and transport it into Gaul, and finally travelling through Gaul on foot, in about 30 days they bring their burdens on horses to the mouth of the river Rhone." (Book v., chap. 2.)

From this passage it may be inferred that the spot where the tin was *melted* and cast into forms for exportation was very near the Mount; and if such spot were close to a large stream, it would in all probability have been the place also for *smelting* the ore, as is the case with the well-known *smelting* and *melting* works by the stream at Chyandour, near Penzance. Now the place nearest the Mount is Marazion; and at the mouth of the large stream forming the western boundary of that town, traces of a very ancient building, used apparently for melting as well as smelting, were discovered in 1849. The stream having been diverted, flowed westward along the base of the adjoining sand-hillock, washing away large portions. In sections thus made, I saw, at the depth of between three and six yards beneath the turf covering the bank, the remains of

* The few lines here omitted will appear in a subsequent page.

ancient walls rudely built of unhewn stones with clay, and near them great quantities of ashes, charcoal, and slag, beside some ancient broken pottery of very rude manufacture, and much brick. In removing a portion of the sand within a few inches of one of the walls, my nephew and myself discovered two fragments of a bronze vessel resting on charcoal, a considerable portion of which had combined with the copper, and a beautiful green substance had resulted—the carbonate of copper. The fragments were each about six inches long, four wide, and the sixteenth of an inch thick, having been evidently parts of the circular top of a vessel three feet in diameter, the mouth being bent back into a horizontal rim three quarters of an inch broad. The thickness of the bronze vessel may have been originally much greater than is now indicated by the fragments. No charcoal was on the insides of the fragments, but their outsides were completely coated with it. One of these fragments is now in the Museum of Economic Geology, in London, and the other in the Museum of the Royal Institution of Cornwall, in Truro. This bronze furnace may have been used for *melting* the previously purified metal, in order to its being cast into the forms mentioned by Diodorus, before it was conveyed to the Mount; and if so, the manner in which tin was anciently melted, is the same as at the present day,—so far at least as that the metal was not in contact with the fire, but in a furnace heated by external fuel, and of the same diameter as the furnace now used, although the modern furnace consists of iron, whilst the ancient one was of bronze.

Here I must observe that Mr. J. T. Blight, F.S.A., in his account of the subterranean chambers at Treveneage, in St. Hilary, printed in the Penzance Natural History and Antiquarian Society's Report for 1867, p. 25, says, in reference to the description I have now and had before given, that "the presence of mortar in the masonry with much brick, indicates the Roman character of these remains." But I can see no such indication, for the use of brick

and mortar was certainly not peculiar to the Romans. The ancient Britons, long before the Roman period, might of themselves, or by the instruction of their Phœnician friends for such an unusual erection, have made and used both bricks and mortar, although we do not find such building materials in their caves or villages, or hill or cliff castles.

Nothing opposed to what I had written in the *Arch. Camb.* appeared until August, 1862, when, at the Truro meeting of the Cambrian Archæological Association, it was, to the astonishment of Cornish men, especially of those best acquainted with the subject, gravely questioned whether the Phœnicians ever visited Cornwall. This scepticism arose from Sir George C. Lewis and other authors having contended that the tin in Canaan in the days of Moses (Numb. xxxi., 22) must have come from India. But they have done so without a tittle of evidence, there being no more reason for supposing India to have supplied Canaan or Egypt with tin 3,000 years ago, because tin is now so largely exported from the Isle of Banca, than for imagining Cornwall to have then exported copper, as well as tin, because it does so now.

Dr. George Smith, the author of the "Religion of Ancient Britain," in his work on the *Cassiterides* published in 1863, which is a candid, careful, and learned discussion of the facts and arguments on both sides of the question, proves most clearly that the Phœnicians did not bring their tin from India, nor from the east, but from Cornwall, with the exception perhaps of a small portion from Tartessus.

At the Annual Meeting of the Royal Institution of Cornwall, held at Truro on the 29th of May, 1863, a paper by myself was read on the same subject, wherein, in addition to what I had previously written, I drew attention to the interesting fact of Mountsbay having been known to history before the time of Herodotus, as shown by the following quotation from Diodorus, who was evidently not aware that the locality described by Hecateus

and the other historians whom he refers to, was the very *Belerion* which he himself has described, and of which the Mount, or Iktin, formed a part. To those, however, who are familiar with Mountsbay, this identity is very apparent. "Amongst them that have written old stories much like fables, Hecatæus and some others say that there is an island in the ocean over against Gaul (as big as Sicily), under the Arctic Pole, where the Hyperboreans inhabit, so called because they lie beyond the breezes of the north wind. That the soil there is very rich and very fruitful, and the climate temperate, inasmuch as *there are two crops in the year.*"* The island here referred to can be no other than Britain. But the only part of Britain to which the description applies is Mountsbay, where still "*there are two crops in the year.*"† As Hecatæus was born 549 B.C., the fact recorded must have been known in Grecian history as far back at least as the sixth century B.C.: and who so likely to have first related it as the Phœnician mariners, then, and for centuries before, the greatest navigators in the world?

In the same paper I have answered the objections of a writer in the *Saturday Review* of 8th Nov., 1862 (p. 563), who, finding no place but St. Michael's Mount to agree with Diodorus' description of Iktin, tries to stultify that author by alleging that he says—"not only the Isle of Wight, but all the islands between Gaul and Britain, can be reached from the mainland at low water," although, as we shall presently see, Diodorus says no such thing. The reviewer, in giving us what *he* thought the meaning of the author, seems to have forgotten that Diodorus Siculus lived in an island of

* Book ii., chap 3. Booth's Trans. i., p. 139.

† Plants, which in almost every locality of Britain would perish or be checked by the frost, continue to grow in Mountsbay throughout the coldest part of the year; and that district consequently yields, in January, February, and March, and sometimes even before Christmas, abundant crops of very fine full-grown brocoli, and in April and May an equal abundance of potatoes; from which two classes of vegetables, tens of thousands of pounds sterling are realized annually by their sale in the London and other markets, several weeks earlier than they could be procured any where else in Britain. No sooner are these early crops removed, than the land is planted with other vegetables, and thus produces two crops in the year, as recorded before the Christian era.

the Mediterranean, and wrote for those who knew little or nothing about the ebbing and the flowing of tides, so that after having described the Isle of Iktin as accessible by carts "during the recess of the tide," he was obliged to explain himself, and to illustrate the effects of the tides, by adding,—“and it is something peculiar that happens to the islands in these parts lying between Europe and Britain; for at the full tide, the intervening passage being overflowed, they appear islands, but when the sea retires, a large space is left dry and they are seen as peninsulas.” This explanation of what his countrymen would have regarded as highly improbable, is literally true; for he does not say, as the reviewer imagines, that *all* the islands between Europe and Britain came within this description,—nor, indeed, that any of them did, which were in deep water like the Isle of Wight; but he speaks only of those which, like the Mount, were in shallow water and on the coast.

The only reason given by the reviewer for considering the Isle of Wight to be the ancient Iktin, is its being nearer than the Mount to Gaul, and because Diodorus says that from Iktin “the traders purchase the tin of the natives and transport it into Gaul; and, *finally*, travelling through Gaul on foot, in about 30 days they bring their burdens on horses to the mouth of the river Rhone.” This passage, however, particularly the word *finally*, which I have italicized, seems rather to show that the tin was carried most of the way from Iktin to the mouth of the Rhone by sea, and therefore probably to the inmost part of the Bay of Biscay, and from thence by land to Marseilles, at the mouth of the Rhone, to avoid sailing round the Spanish peninsula, as was the more ancient route while Tyre and Tarshish were flourishing. And it is remarkable that the sandy parish of *Lelant*, in the bay of St. Ives, only four miles from the Mount, is called by the same name as *Les Landes*, the sandy coast of the Bay of Biscay, (*t* and *d* being interchangeable letters,) as if the one name had been de-

rived from the other through the tin traders, who must have been well acquainted with both places. Moreover, the carriage by land from the *north* of France to the Mediterranean, as the reviewer reads Diodorus, would, in those rude ages, have been not only more expensive, but more unsafe than by the route I have mentioned.

After having written my reply to the article in the *Saturday Review*, I saw the pamphlet of Colonel Sir Henry James, R.E., on the block of tin dredged up 40 or 50 years since at the entrance of Falmouth Harbour, which I have seen at the museum of the Royal Institution of Cornwall. It weighs about 130 lbs., and may be of the very form referred to by Diodorus, into which the tin was cast before it was carried to Iktin. "It is 2 feet 11 inches long, 11 inches wide, and 3 inches thick at the centre; perfectly flat on one side, but curved on the other; and having four prolongations at the corners, each one foot long;"—thus resembling a butcher boy's tray, and well adapted for being carried by hand by two men,—for being firmly placed on the curved bottom of a boat for exportation,—and for being afterwards strapped, two of them together, to a pack-saddle, with their flat sides against the sides of the horse. A plan of it is given below. The boat containing this block is sup-



posed by Sir Henry to have been lost on its way from the Mount to France, at the entrance of Falmouth Harbour, where it was dredged up.

Two reasons present themselves for choosing the Mount as a dépôt for the purified tin;—the one, for safe custody until the ships

arrived ; the other, for its being afterwards shipped with the least possible delay and trouble. In those remote ages, when walled towns were as common in the Land's-end district as they were in Palestine,—when every hill-top, numerous as they are, and every cape or headland capable of fortification, had been converted into strong-holds, it is evident that, during the absence of the Phœnician ships, some strongly fortified place was required for the safe custody of the tin purchased from the natives ; and no place in Cornwall was by nature so strongly fortified as the Mount. It was also well supplied with fresh water and a pleasant residence, and therefore, probably, the constant habitation of Phœnician merchants. For the Phœnicians, according to Thucydides, had resident merchants or “ settlements all round the coast of Sicily,” and “ secured the capes on the sea, and the small circumjacent islands, for the purpose of trafficking with the natives.”* This strongest of all Cornish fortresses had also on its inner side a port well sheltered from all storms, into which ships could always safely enter when the tide was in.

From this port and fortress the Phœnician merchants may have come to the mainland to purchase not only tin, but other commodities also. Dr. Smith observes that “ as salt was a commodity imported into Britain, in return for the tin exported, it does not appear improbable that Cornish fish, as well as tin, was taken from thence by the Phœnicians and carried to distant markets ;”† and we know that in the time of Nehemiah “ the Tyrians had a fish market at Jerusalem,” Neh. xiii., 16 ; and a cargo, partly of fish and partly of tin, is safer than one exclusively of tin.

More need not be said in proof of the Mount being the ancient Iktin, particularly as the only other competitors for this honour are the Isle of Wight ; Drake or St. Nicholas Island, in Plymouth Sound ; the Black Rock, at the entrance of Falmouth Harbour ;

* See Trans. of Geol. Soc. of Corn., vol. iii., p. 120.

† Cassiterides, p. 49.

the Wolf Rock ; and one of the Scilly Isles, none of which has a shadow of reason in its favour. The public are now so fully acquainted with the rightful claims of the Mount that no author will in future deny it to be the Iktin of Diodorus.

Mr. Wm. Pengelly, F.R.S., in a paper read before the Royal Institution of Great Britain, on 5th April, 1867, "*On the Insulation of St. Michael's Mount, Cornwall*," concludes, that the Mount "possesses all the characters, and occupies the position of the Iktis of Diodorus, and no other existing island has any claim to this distinction "

In a paper "*On the Antiquity of Man in the South-west of England*," read on the 23rd of July, 1867, at the general meeting in Barnstaple of the Devonshire Association for the Advancement of Science, &c., the same author refers again to St. Michael's Mount, to prove that its insulation dates long before the Christian era. In doing this, he occupies several pages in showing the utter improbability of its having been first insulated (as some authors have supposed) so recently as the eleventh century, by a tremendous irruption of the sea, or by a subsidence of the coast. The following geological facts point to the same conclusion, while they also prove that a very extraordinary irruption of the sea *did* take place about that period, but not such as to make any change in the daily insular and peninsular condition of the Mount.

In my paper read before the Royal Geological Society of Cornwall, in 1846, "*On the Origin of the Sand-hillocks of St. Ives Bay and Mountsbay*," I showed that the sand which forms them has, for the most part, been blown in from the shore, and has accumulated imperceptibly upon a continuously growing vegetable surface,—the deposits during a single storm being too slight to cover the herbage, or to check its growth, except occasionally. Such *occasional* complete coverings and destructions of the herbage by sand-storms are shown by the *thin* dark lines — the remains of old vegetable surfaces—which alternate with *thick* layers of light sand not contain-

ing any vegetable remains, but studded with land-shells so perfect that they must have been buried *in situ* (on the very spots where their inhabitants had been pasturing or hybernating) by gradual accumulations of sand, which neither covered the herbage nor checked its growth. These shells, now seen *in situ*, are the only existing evidence that turf ever grew in those strata of light sand.

To this process of accumulation by the agency of the winds there is a remarkable exception in the long sand-bank between Penzance and Marazion, the herbage of the highest parts of which appears to have been once completely covered by gravel and small pebbles, deposited directly by the sea. In a section of the highest part of this bank, near Marazion bridge, in 1846, I observed an extensive layer of small rounded pebbles and gravel three feet below the green surface, and not less than ten or fifteen feet above the level of high water; whilst in the subjacent sand, deposited by the winds alone, numerous perfect land-shells (the *Helix virgata* and *Bulimus acutus*) were embedded throughout a depth of four or five feet beneath the pebbles. This was at the *eastern* extremity of the bank, and within a few yards of the spot where my nephew and myself afterwards found the two fragments of the bronze furnace above described. Near its *western* extremity I saw, in 1851, a precisely similar stratum, and at the same depth from the surface, in the deepest of the cuttings made for the railway, close on the eastern side of a line from Gulval church to the pole on the Cressars Rock.* Here, too, perfect land-shells were embedded throughout a depth of four or five feet beneath the pebbles. This stratum is now faced up by a stone wall. The distance between the two spots is a mile and a half. In each case, the layer was about an inch thick, and extended between ten and twelve yards in diameter, over a part of the bank more elevated

* This most elevated western part of the sand-bank, or rather the western slope of it, is remarkable also for being the only known place in Cornwall where the *Cynodon Dactylon* grows, which, in France, is one of the most common grasses found by the wayside.

than the parts immediately around it, as if the wave which carried the gravel and pebbles to the top of the elevation had not sufficient velocity to carry them over it. I have also observed a similar marine deposit in the deep railway cuttings through the same sand-bank, near Half-way-house, with land-shells imbedded *in situ* throughout a depth of four or five feet beneath it.

It being thus evident that a very extraordinary irruption of the sea took place in Mountsbay—sweeping over every part of a long sand-bank covered with turf, and, in some places, ten feet or more above high-water mark,—it will be interesting to consider at what period this inundation might have happened. Assuming that the sand has accumulated on the higher parts of the bank, since the inundation, at the rate of one inch in twenty or twenty-five years, (and the accumulation has not, I think, exceeded that rate during the last fifty years,) and knowing that the present height of the bank above the layer of gravel then deposited is about three feet, we are carried back to about the eleventh century, when, in 1014, “on the eve of St. Michael’s mass, (according to the Anglo-Saxon Chronicle,) came the great sea-flood wide throughout this land, and ran so far up as it never before had done, and washed away many towns, and a countless number of people.” By this extraordinary inundation, the layers above described were probably deposited. In neither of the sections was there any indication of the sea having ever before passed over the growing turf, although, from the land-shells found *in situ* and in perfect preservation four or five feet beneath the pebbles, the turf must have been constantly growing on the bank from as far back probably as the commencement of the Christian era.

Now, if the sea a few centuries ago could, in a large and open bay, sweep over the whole of a long sand-bank, in some parts ten or fifteen feet above high water, and for centuries before always covered with turf and undisturbed by the waves, what would it not have done in funnel-shaped coves, such as that of Lamorna,

in the same bay? The effects of the earthquake waves there, on 1st November, 1755, I have elsewhere* described. Vast masses of shingle on other parts of our coast have doubtless by similar means been heaped up to a great height above the present reach of the waves; and, although the floors on which they rest have never changed their level, they have been erroneously classed by geologists amongst “raised beaches.”

Singularly enough, an instance of this erroneous classification seems to have lately occurred in connection with the very irruption of the sea now under consideration. At the annual meeting of the Royal Geological Society of Cornwall, on the 5th of November last, a paper from Mr. Thomas Cornish was read, in which he stated that the cliff at Chyandour (two or three furlongs west of the long sandbank above mentioned) was about twenty-five feet above high-water mark, and consisted of clay, rab, and small stones packed tight, and nowhere presenting any signs of disturbance. The base of it rested on rock. In taking off the face of the cliff, for the purpose of building a promenade wall, the workmen came upon a layer of water-worn pebbles, about twenty-three feet above high-water mark, and two feet below the upper surface of the cliff. The pebbles were of all sizes, from a hen's egg down to a pea or a pin's head, and were mostly quartz, giving to the whole a white appearance. The layer varied from three inches to nine inches in thickness, and had the appearance of “*the ordinary raised beach.*” It occurs at the distance of about a furlong westward from that stream at Chyandour which is nearest to Penzance.

In all probability, this thin layer of pebbles and gravel, *two* feet below the surface of the cliff, was deposited by the same irruption of the sea which left the thinner layers of pebbles and gravel *three* feet below the surface in the three different parts of the neighbour-

* The Land's-end District—its Antiquities and Natural History, p. 101.

ing long sand-bank, as above described, and if so it is *no raised beach*.

If it be objected that the layer at Chyandour was twenty-three feet above high-water mark, whilst those in different parts of the sand-bank were not perhaps half that elevation, and that therefore all the layers could not have proceeded from one and the same irruption, it may be replied that this is no valid objection, inasmuch as the sea must have made complete and unresisted breaches over the low sand-bank into the adjoining marsh, whilst the higher cliff at Chyandour resisted the waves and occasioned their higher rise. It was probably the highest wave during the irruption that left the layer on Chyandour cliff, and one of the lower and subsequent waves that left the layers on the sand-bank.

There is no reason for supposing the sea has made any encroachment on the land in Mountsbay from the time of Diodorus until within the last hundred years. During these last hundred years, however, its encroachment has been very considerable, owing entirely to the removal of the sand, gravel, and shingle from the beach on the east and west of Penzance, for agricultural and other purposes. It matters not what particular part of the beach may be excavated for these purposes, for the sea will very quickly distribute the loss equally over the whole. The general effects of this abstraction from the beach I have described in my paper last alluded to; and I will now confine myself to such effects as are apparent on the "causeway" leading from St. Michael's Mount to Marazion, to which Mr. Pengelly has drawn attention, by quoting from Dr. Oliver's *Monasticon* (p. 28) the following passage: — "Bishop Lacy, on August 10th, 1425, considering the great losses of vessels and lives during the storms in Mountsbay, encouraged the faithful to complete the *stone causeway* between Marazion and St. Michael's Mount." On this isolated passage, Mr. Pengelly remarks "that the 'causeway' apparently begun was not a mere footpath to be used at low water, but was intended as a permanent

protection for ships." But if what is now, and has been immemorially, called the "*causeway*," were intended by the bishop, and if he thought *it* to have been a work *begun* by men, he must have been greatly mistaken, for there is no vestige of such a beginning. Indeed, the labours of man have been indirectly *lowering*, instead of *heightening* the natural causeway.

In the time of Leland, about three hundred and thirty years since, it was uncovered *six*,* but now only *four* hours out of the twelve, on an average. Therefore, it is now evidently lower than it used to be. This is owing to the sand adjoining it on the west having been abstracted or lowered by the causes above mentioned. An equally obvious effect has resulted from this lowering of the adjoining sand. The causeway, within the last hundred years, was almost in a straight line between the present entrance into the Mount and the present entrance by the slip into Marazion. Now, it has assumed a very considerable bend towards the east, curving near the centre to a distance of many yards from its former course. This curve has been produced by the more powerful tides and waves resulting from the lowering of the sand and the consequent deepening of the water on the west, whereby the sea is annually driving the central part of the causeway further towards the east. Notwithstanding this curvature, however, the causeway is still the place where the "two seas" or currents meet at every tide—the one from the west and the other from the east, to insulate the Mount; and whenever the waves are large, the causeway is so altered and unfit for the passage of carts, by reason of the large rounded blocks of stone borne along by the waves and deposited thereon when they meet, that men are employed to remove these obstacles before the waggons can cross. This shoal or causeway was no more begun by man than was the shoal "where two seas met," and where St. Paul was wrecked (Acts xxvii., 41).

Bishop Lacy's desire probably was that the eastern arm of the

* Itinerary, vii., p. 120.

little pier, then at the Mount, which was almost in the very line of the then existing natural causeway, should be extended in that straight line as far as Marazion, and thus form a large and commodious harbour for ships. This eastern arm (which now forms the oldest part of the present eastern arm) the bishop probably wished to be regarded by the public as the commencement of his proposed "stone causeway."

The Rev. Dr. John Bannister, in the *Journal of the Royal Institution of Cornwall*, for October, 1867 (p. 324), states that he is "convinced that the Phœnicians traded here for tin, and that St. Michael's Mount . . . is the Iktis of Diodorus Siculus."

Dr. Bannister's paper is a reply to an article in *Macmillan's Magazine* for April, 1867, by Professor Max Müller, who imagined that the only evidence the Cornish possess of their mines having been ever worked, or the tin-trade having been ever carried on by Jews, is that old smelting houses are still called *Jews' houses*, in Cornwall, and that the nearest town to St. Michael's Mount is to this day called "*Market-Jew*," as well as Marazion.

I will not follow the Professor in the process by which he shows that the name *Jews' houses* has no connection with Jews. But I may perhaps be able to satisfy him still more clearly than he has satisfied himself that the name *Market-Jew* originally had not the least reference to a Jews' Market. In doing so, I must first show the origin of the older name of the town, for which purpose I will adopt Dr. Bannister's method of accounting for names of many ancient places, as given by him in his paper on *Nomenclature*, in the *Journal of the Royal Institution of Cornwall*, for October, 1866 (p. 112).

Marazion was for centuries, before it was superseded by Penzance, the only general market-place for the Land's-end district. It had three statute markets, and was also, according to Diodorus, the market at which the Mediterranean merchants purchased their tin. Now the Cornish word for "market" is *marchaz*, or (by con-

traction) *maraz*: the Cornish for “markets” is *marazion*. Throughout the Land’s-end district, therefore, if one person asked another to go to *marazion*, that is, to “the markets,” the town of Marazion was thereby indicated as clearly as if it had a name of its own; and thus its general name became its proper name.

The name on the ivory seal of its corporation, is *Marghasion*, which, although spelt with an *s*, is always pronounced as if spelt with a *z*,—the letter *s* in nearly all words being still generally pronounced as *z*, in Cornwall. This seal is a very old one—as old perhaps as the charter of incorporation, granted in the 37th of Elizabeth. Mr. Doubleday, of the British Museum, to whom I sent an impression from it, in 1853, when my late father was the Town Clerk, wrote me in reply as follows:—“I send you, in return, an impression from an ivory seal in our possession. It is the Sheriff’s of Lancaster, *temp.* H. VIII., and I think it was engraved by the same person who engraved your seal.” Engravings from these ivory seals are here given. * The only name, however,



* The castle on the Marazion seal resembles the castle forming the crest of the Town Arms, painted in 1770 on a board suspended in the Town Hall. This crest consists of a central round tower, flanked on either side with an adjoining smaller round tower, covered with a dome and surmounted by a flag-staff and flag, the central tower being covered, not with a dome, but with a roof like a mitre; the band which usually accompanies a mitre being represented beneath it. This mitre-shaped roof rises much higher than the flags of the lateral towers. The portcullis in the painting is raised, in the seal it is down. The corners, where the side-pillars unite with the central one—in the seal as well as in the painting—have a twisted pattern,

in the charter by which the town is called, is *Marghasiewe*, the last four letters being, with *iou* and *ion*, the three different ways in which the plural of Cornish nouns is formed. But the town has never been so called by the public during the present century, and probably never during the last.

Market-Jew, the name always within living memory used by the rural population, is considered by Dr. Bannister, as well as by the Professor, to be a corruption of its more ancient Cornish name. But *market* is clearly an English word, and no corruption of the Cornish; whilst *Jew* is nothing more than a very common way of pronouncing *iewe*, the Cornish plural, as written in the name *Marghasiewe* in the charter. And if the sound *i* in the first of these four letters is the more euphonious after the word *marghas*, the sound *j* of the same letter is the more pleasing to the ear after the word *market*. Therefore, the name *Market-Jew* was adopted instead of *market-iewe*. A local example of these two different sounds of the letter *i* occurs in the name of the chief tin-producing parish in the district, which is by the country people called *St. Iust* (*St. Teust*), while all others call it *St. Just*. It is remarkable that whilst the local gentry have always called the town by its pure Cornish name, *Marazion*,

like a rope. The shield in the painting thus crested with the castle contains three similar but smaller castles.

Marazion, as far back as the eleventh century, having belonged to the Priory of St. Michael's Mount, the arms adopted by the corporation were probably those of the Priory. Indeed, a corbel of what is said to be Norman-elman, which projected from the wall of the ancient Nunnery of the Mount, and which now supports one of the pillars of the new balustrade of the terrace, bears on one of its five faces or shields three castles, all flat at the top and with battlements. This shield is the front one. On one of the other escutcheons are three *fleurs de lis*, with a *chevron* between. The rest of the five shields are in blank. To see this corbel you must pass through a door on your left in ascending to the castle.

St. Michael's Mount in Cornwall, and St. Michael's Mount in Normandy were given by William the Conqueror, about the year 1085, to the Earl of Moretaine, afterwards Earl of Cornwall. Each is an "insulated rock of granite," and "both mounts appear from the earliest period to have been fortifications as well as religious houses, and to have contained garrisons as well as conventual buildings." (Oliver's *Monasticon*, p. 30, 31.)

the rest of the inhabitants, after having adopted the English language, have always called it *Market-Jew*.

It thus clearly appears that the name *Market-Jew* has no more to do with the Jews than the name *Penny-come-quick* (well known in Plymouth, and a mere corruption of the Cornish *Pen-y-cum-gwic*, "Head of the creek valley") has to do with the idle stories connected with it. But there is better evidence than that "derived from names of places and other relics of language" to shew the connection of the Jews with the tin trade and with the working of tin mines in Cornwall. This evidence has been adduced by Dr. Bannister in his reply to the Professor, who appears therefore to have been premature in concluding that he had made the Jews vanish from Cornwall (p. 491). It seems moreover not at all improbable, as Scawen supposed, that "Jews as well as Phœnicians were very ancient traders in Phœnician ships," after they had taken possession of Canaan; and that if the Phœnicians had settlements in Cornwall for carrying on the tin trade, the Jews would also have had residents there for that purpose, and would not have abandoned such a lucrative commerce until their banishment from our island five or six centuries ago.

It being now established that the Phœnicians came to Mounts-bay for tin both before and after the time of Moses,—that the Mount is the *Iktin* of Diodorus,—and that Jews were anciently connected with the tin trade and with the working of tin mines in Cornwall,—let us, in conclusion, consider the derivation of the name *Iktin*, and of the name of the island in which we live.

Ik is the Cornish for "port." *Tin* is the metal so called (as is supposed) by the Phœnicians, and the name continues unchanged in the Saxon, English, Dutch, Danish and Icelandic languages; but the Swedish name is now *tinn*; the German, *zinn*; the French, *étain* and *tain*; the Latin, *stannum*; the Italian, *stagno*; the Spanish, *estano*; the Portuguese, *estanho*;

the Irish, *stan*; the Welsh, *ystaen*; the Cornish, *stean*; the Armoric, *stean*, and also *staen*: the initial letter or sound *s* in each of the last nine names being I consider a mere prefix, as in the modern word *sneeze*, for *neeze* (Job. xli., 18). With this exception, and except the ordinary terminations of the Latin, Italian, Spanish and Portuguese names, these thirteen different spellings are merely the different ways in which different nations of Europe pronounce the Phœnician word *tin*. *Iktin* therefore signifies "tin-port." Why this derivation of the ancient name of the Mount should have remained so long undiscovered, I have now to explain.

Diodorus calls the Mount *Iktin*, and by no other name. All his translators, however—French and English, as well as Latin—finding the word in the accusative case, and imagining it declinable, concluded that its nominative was *Iktis*, although another Greek noun which is really *Iktis* in its nominative case has *Iktida* for its accusative, and not *Iktin*; and the Greek word which in the nominative is *Tis*, is *Tina* in the accusative, and not *Tin*. It is strange that the translators should thus have converted the very descriptive name *Iktin*, by which Diodorus calls the chief tin-port in the world, into *Iktis*, a name bearing no reference whatever to the commodity for which it was famed. And it is still more strange that all writers on the subject, after having known that I had, in the *Arch. Camb.*, exposed this blunder, should have continued to miscall the Mount *Iktis*.

But we must not suppose, because the Mount was anciently called *Iktin*, that *Iktin* was its *only* ancient name. If names were anciently descriptive of the places and things to which they were given,—and if the name *Iktin* described the Mount only as a "tin-port,"—another name would have been required for distinguishing it also as a mount and fortress for the safe custody of tin, and that name would have been *Bretin* ("tin-mount")—

bre being the Cornish for "mount." Thus in all probability the two very ancient names of the Mount were *Iktin* and *Bretin*.*

By the former of these names the Mount was not so exclusively distinguished as by the latter, for there were doubtless other *Iktins* ("tin-ports") along the coasts of Cornwall and Devon, at which the Mediterranean ships must have touched in their voyage to the Mount. Amongst these may have been the ports at the mouths of the river Fal, and of the streams of Pentuan and Par valleys, and at the mouths also of the rivers which descend from the rich and very anciently mined tin-district of Dartmoor. Therefore *Iktin*, "the Tin-Port," could not have been so distinctive of the Mount as *Bretin*, "the Tin-Mount," for there was but one Tin Mount.

This Mount, which has given its *modern* name to Mountsbay, may have given its *ancient* name, *Bretin*, to the whole of our island; not only because it was the most striking object, and the most important place in this country known to the Phœnicians, but also because this ancient name—which we pronounce *Britain*, and which the French pronounce *Bretagne* or *Bretain* (*tain* being the French for tin)—was as uncommuni-

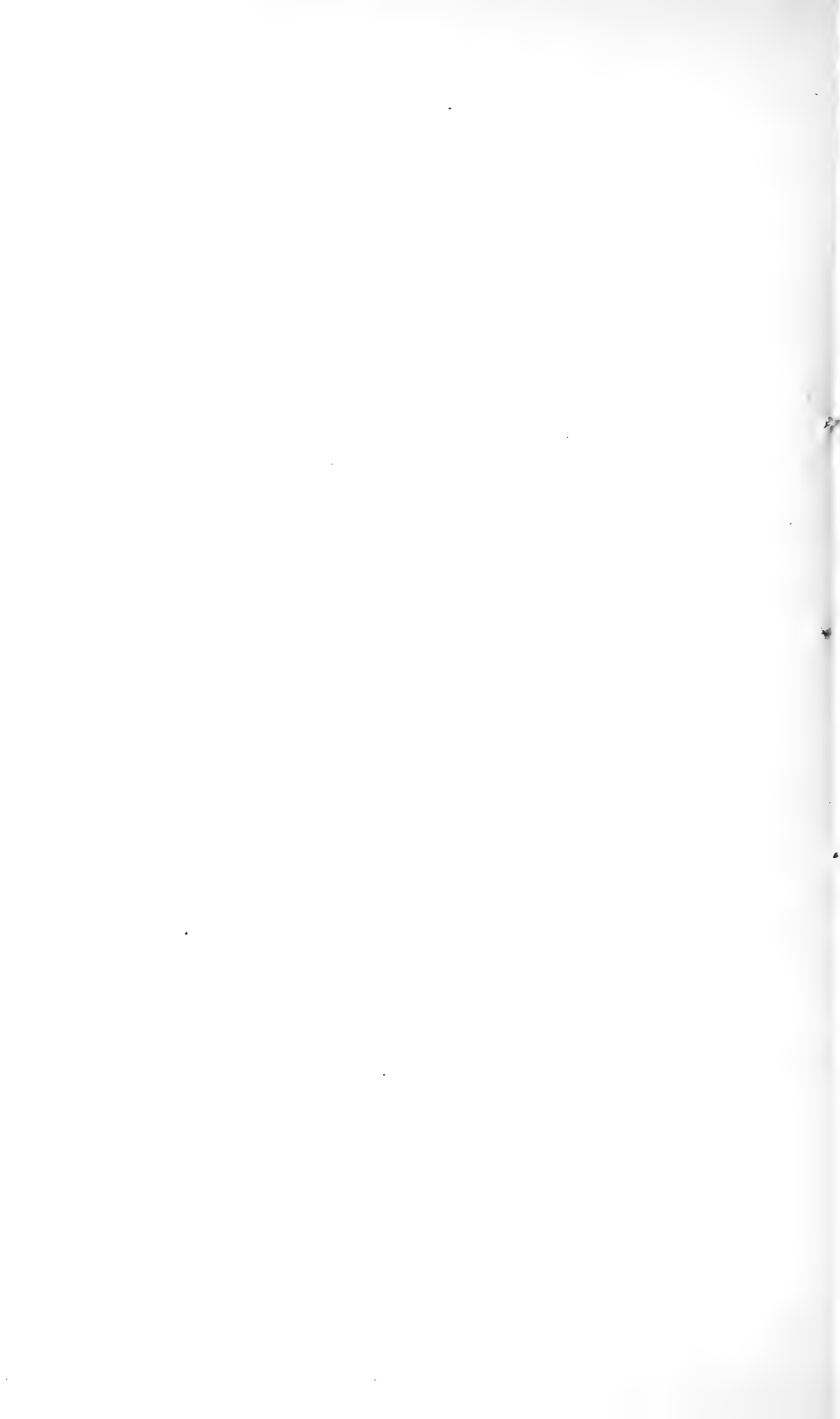
* It is not uncommon for places and things to have each more descriptive names than one. The island we live in is called *Albion* as well as *Britain*, from its *white* cliffs. And tin is known by two other names, *plumbum album*, "white lead," from its great resemblance to lead, except in colour; and *κασσιτερος* from *κάτω*, "to adorn or garnish," as if tin were in ancient as well as in modern times commonly used not only as an alloy, but also for coating bronze or iron, for the sake of ornament or to make them bright and white like silver. This use of tin for imparting an external and deceptive appearance like silver may have been the origin of its figurative meaning as an emblem of hypocrisy (Is. i., 22, 25), like whited walls (Acts xxiii., 3), or garnished sepulchres (Mat. xxiii., 28, 29).

Thin plates of iron coated with tin are often called *tin*, as if they consisted wholly of tin. And the name *latten*, by which they used to be called in this country and are still called in Plymouth and its neighbourhood, is evidently the anglicized French word for tin, with the article prefixed—*l'étain*. In the west of Cornwall, however, this name (*latten*), if ever used, is now quite obsolete, and tin-plate is there commonly called *lattis*; but why I cannot conjecture, unless it be a corruption of the Italian word *latta*, which itself, like *latten*, may be a corruption of the French *l'étain*. The addition of the ordinary English plural letter to *latta*, "tin-plate," would make it *lattas*, "tin-plates," which phonetically is not far from *lattis*.

cative of its locality as the Phœnicians could have wished, who, as is well known, sought to conceal the place whence they procured their tin. For the name *Bretin*, *Βρεττανικη*, or *Britannic Islands*, signifies no more than did the name *Cassiterides*, "Tin Islands," which Herodotus uses in ignorance of their situation.

"Si quid novisti rectius istis
Candidus imperti: si non, his utere mecum."





An ABSTRACT from the METEOROLOGICAL REGISTER, from 1st July, 1867, to 30th June, 1868, kept at the Navigation School, Gascoyne Place, Plymouth, (Latitude $50^{\circ} 22\frac{1}{2}'$ N., Longitude $4^{\circ} 7\frac{1}{4}'$ W.,) by JOHN MERRIFIELD, F.R.A.S.

MONTH.	STANDARD BAROMETERS FOR MEAN LEVEL OF THE SEA, AT 32° FAHT.				SELF-REGISTERING THERMOMETERS (<i>Negretti and Zambra's</i>).						REMARKS.		
	Maximum for Month.	Minimum for Month.	Mean for Month.	Average for Month.	Average for Month.	Maximum (in shade) for Month.	Minimum for Month.	Average Dry Bulb for Month.	Average Wet Bulb for Month.	No. of Days on which Rain or Snow fell.			
1867.													
July	30.298	29.282	29.900	73.8	74.5	62.6	80	41	63.9	59.7	20	1867.—SEPTEMBER.—On the morning of the 3rd day, a very violent thunder-storm occurred. NOVEMBER.—Only four days (14th to 18th) the barometer fell below 30 in. Maximum barometer for the year on 9th day. DECEMBER.—Snow fell during the first five days of the month. Minimum barometer on 1st day. 1868.—JANUARY.—Middle of the month exceedingly mild. JUNE.—A very dry month. Only four days (20th to 24th) the barometer fell below 30in. Maximum temperature for the year on the 17th day.	
August	30.221	29.745	29.993	52.1	63.3	63.3	83.5	41	64.7	61.2	16		
September	30.534	29.750	30.101	48.3	69.1	58.7	76	36	60.3	57.4	12		
October	30.462	29.527	29.911	44.3	59.8	52.1	68	32	53	51.7	22		
November	30.643	29.508	30.293	35.1	51.7	43.4	61	26	43.6	42	6		
December	30.385	28.878	30.079	34.7	46.8	40.7	55	19	39.9	38.9	17		
1868.													
January	30.403	29.992	29.974	33.6	45.5	39.6	53	19	40.5	39.3	19		
February	30.679	29.539	30.222	37.9	51.8	44.8	59	24	44.4	42.9	18		
March	30.558	29.285	30.057	38	55.6	46.8	63.5	28	47.5	45.1	16		
April	30.402	29.401	29.981	39.2	60.1	49.7	67	25	48	45.3	11		
May	30.331	29.446	29.974	47.2	69.5	58.3	80(?)	36	60.3	56.3	8		
June	30.330	29.664	30.173	49.4	74	61.7	81	37	64.4	60	4		
Average for the Year	30.437	29.501	30.051	42.6	61	51.8	68.9	30.3	52.5	50	14.1		

The observations are made between Eight and Nine a.m. The instruments are supplied by the Board of Trade, and compared at Kew.

FLORA OF DEVON AND CORNWALL.

BY

ISAIAH W. N. KEYS,

CURATOR OF BOTANY IN THE PLYMOUTH INSTITUTION AND DEVON AND CORNWALL
NATURAL HISTORY SOCIETY.

PART III.

HEDERACEÆ—COMPOSITÆ.

THE Author has again to acknowledge the kindness of Mr. T. R. A. Briggs and Mr. F. P. Balkwill in furnishing him with material for the present Part.

He is also indebted to Miss K. Lothmann for a MS. list of the plants growing wild about Ivybridge; and to Dr. Trimen for the use of a copy annotated by himself of Stewart's *Torquay Flora*.

He has also to thank the Rev. W. S. Hore for interesting notes on some of our rarer species. Of these notes use will be made hereafter.

He invites suggestions, corrections, and information from all persons intimate with the botany of this district.

Bedford Street, Plymouth,
September 7th, 1868.

ABBREVIATIONS.

TITLES OF BOOKS.

<i>Bab. Man.</i>	..Babington's Manual of British Botany.	<i>M.H.D.</i>	} Murray's Handbook of Devon and Cornwall.
<i>B.B.F.</i>	} Bentham's British Flora.	<i>M.H.C.</i>	
<i>Brit. Fl.</i>		<i>Nat.</i>	..The Naturalist.
<i>B.G.</i>	..Botanist's Guide.	<i>N.B.G.</i>	..Watson's New Botanist's Guide.
<i>Bot. Gaz.</i>	..Botanical Gazette.	<i>N.D.H.</i>	..The North Devon Handbook. (Banfield, Ilfracombe.)
<i>Cyb. Brit.</i>	..Watson's Cybele Britannica.	<i>P. & D. Fl.</i>	..Banks's Plymouth and Devonport Flora.
<i>C.B.S.</i>	..Supplement to C. B., 1860.	<i>Per. Dart.</i>	..Moore's Perambulation of Dartmoor.
<i>E.B.</i>	..English Botany.	<i>Phytol.</i>	..The Phytologist.
<i>E.B.S.</i>	..Supplement to E. B.	<i>Polytech.</i> 1856.	..Report of the Royal Cornwall Polytechnic Society of that year.
<i>Fl. Dev.</i>	..Flora Devonensis.	<i>Rav.</i>	..Ravenshaw's Flowering Plants and Ferns of Devonshire.
<i>Fl. Sid.</i>	..Flora Sidostiensis. (Hoyte, Sidmouth.)	<i>Tor. Fl.</i>	..Stewart's Torquay Flora.
<i>Fl. Tot.</i>	..Hannaford's Flora Tottoniensis. (Hannaford, Tottones.)	<i>W.D. & C. Fl.</i>	..Jacob's West Devon and Cornwall Flora, 1836-7.
<i>H.B.F.</i>	..Hooker's British Flora.		
<i>Journ. Bot.</i>	..Journal of Botany.		
<i>J.B.T.</i>	..Jones's Botanical Tour.		
<i>J.B.T. Ap.</i>	..Appendix to J. B. T.		

NAMES OF PERSONS.

<i>Atw.</i>	..Miss M. M. Atwood.	<i>Jul.</i>	..Rev. R. A. Julian.
<i>Bab.</i>	..Professor Babington.	<i>Lees</i>	..Mr. E. Lees.
<i>Bail.</i>	..Mr. Charles Bailey.	<i>Mack.</i>	..Mr. F. Mackenzie.
<i>Balkw.</i>	..Mr. F. P. Balkwill.	<i>Maw</i>	..Mr. George Maw.
<i>Bank.</i>	..Mr. J. Banker.	<i>Miss H.</i>	..Miss Harrison.
<i>Bartl.</i>	..Mr. George Bartlett.	<i>Miss L.</i>	..Miss K. Lothmann.
<i>Bor.</i>	..Mr. Borrer.	<i>Miss W.</i>	..Miss Elizabeth A. Warren.
<i>Briggs</i>	..Mr. T. R. Archer Briggs.	<i>Parf.</i>	..Mr. E. Parfitt.
<i>Clark</i>	..Mr. Thomas Clark.	<i>Park.</i>	..Mr. C. E. Parker.
<i>Cocks</i>	..Mr. W. P. Cocks.	<i>Pasc.</i>	..Mr. F. P. Pascoe.
<i>Curn.</i>	..Mr. W. Curnow.	<i>Read.</i>	..Mr. J. J. Reading.
<i>Flow.</i>	..Mr. T. B. Flower.	<i>Serv.</i>	..Rev. C. Scriven.
<i>Gibs.</i>	..Mr. G. S. Gibson.	<i>Stew.</i>	..Mr. R. Stewart.
<i>Gould.</i>	..Mr. F. H. Goulding.	<i>Towns.</i>	..Mr. F. Townsend.
<i>Henf.</i>	..Mr. A. Henfrey.	<i>Trim.</i>	..Dr. Trimen.
<i>Hore</i>	..Rev. W. S. Hore.	<i>Ward</i>	..Mr. N. Ward.
<i>Jac.</i>	..Rev. J. Jacob, LL.D.	<i>Warr.</i>	} Rev. G. B. Warren.
<i>Johns</i>	..Rev. C. A. Johns.	<i>War.</i>	
<i>Jord.</i>	..Mr. R. C. R. Jordan.	<i>Wats.</i>	..Mr. H. C. Watson.

OTHER ABBREVIATIONS, SIGNS, ETC.

- oImplies that the authority for the locality requires corroboration.
- H.S.Herb.* ..After the name of a place shows that a specimen from that locality is in the herbarium of the Royal Horticultural Society of Cornwall.
- !After the name of a place shows that a specimen from that locality is in the herbarium of the Plymouth Institution and Devon and Cornwall Natural History Society.

Native Country.

- +Possibly introduced, but now having the appearance of being a true native.
- ‡Probably introduced, but admitting of some slight doubt on the subject.
- *Certainly naturalized.
- []Although naturalized, having very slender claims to be considered an aboriginal native, &c. *Vide* Bab. Man.

FLORA

OF

DEVON AND CORNWALL.

(Continued.)

I. FLOWERING PLANTS.

Class I. DICOTYLEDONES or EXOGENS.

Division II. CALYCIFLOREÆ.

Order XXXVIII. HEDERACEÆ.

Hedera Linn. Ivy.

H. Helix (L.) — *E.B.* 1267. — Rocks, old walls, hedges. — **D.** Common. It would be superfluous to cite localities. — **C.** Equally common in this county.

Order XXXIX. CORNACEÆ.

Cornus Linn.

C. sanguinea (L.) — *E.B.* 249. — Hedges and thickets. — **D.** Frequent. Not uncommon about Plymouth and Devonport, *e.g.* at Deadlake, Ford, &c.; Newton Ferrers. Anstice cove: *Lees* in *Phytol.* 1851, p. 241. St. Mary-church: *Rav.* Northam, &c. N.D.: *Maw* in *Phytol.* 1853, p. 792. Dartmouth: *Dr. Trimen*

MS.—**C**. Near Cawsand. Near Liskeard: *Pasc.* in *Phytol.* 1847, p. 944. Lanivet (H. S. Herb.): *Mrs. T. Grylls.* Dog-wood.

Division III. C O R O L L I F L O R Æ.

Order XL. LORANTHACEÆ.

Viscum Linn. Mistletoe.

V. album (L.) — *E. B.* 1470. — Parasitical on various trees. Scarcely entitled to a place in the Flora of our district.—**D**. In *Fl. Dev.* it is recorded as found “in an orchard at Holcombe Rogers [Halcombe Regis], on the borders of Somersetshire (*Rev. A. Neck*).” In *Rav.* it is said to be found in “orchards in the east of the county; on an *oak* in a wood three miles from Plymouth, by the side of the S. D. Railway (*G. W. Gissing*);” and (on the authority of *Fl. Sid.*) at “Harpford; Larkbere; and on Pin farm near Otterton, plentiful.” “On apple-trees in the orchard at Ilsham:” *Tor. Fl.*—**C**. In the grounds of Pentillie!, on the Tamar; no doubt introduced.

In *Cyb. Brit.* ii. 5, the S. limit of this plant is stated to be in Devon.

Order XLI. CAPRIFOLIACEÆ.

Adoxa Linn. Moschatel.

A. Moschatellina (L.)—*E. B.* 453. — Woods and shady hedge-banks. — **D**. Frequent. In several lanes about Plymouth, *e.g.* lane leading from Tavistock-road (by the reservoir) to Egg-buckland; lane leading from Egg-buckland to Stoney-bridge; Linkety-lane, near Widey; Manadon wood; Manadon hill; Leigham; near Pontey's nursery, Tavistock road; left bank of the Plym, near Longbridge; Saltram. Near Devonport!: *Hore*. Ivybridge, “common:” *Miss L.* Tavistock; Withecombe wood, near Exmouth; Totnes; Lustleigh; Ashburton; road-side be-

tween Manaton and N. Bovey; Chudleigh: *Fl. Dev.* Bank near the pools by Lisburn-crescent [Torquay]: *Tor. Fl.* Near Lee; Chambercombe; Slade: *N. D. H.*—**C.** About Bodmin: *Pasc. in Bot. Gaz.* ii. 39. Cardynham (H. S. Herb): *Mrs. T. Grylls.*

Sambucus Linn. Elder.

S. Ebulus (L.)—*E. B.* 475.—Hedge-banks.—**D.** Dalich, Woodbury hill (*Miss Filmore*); in a field at Staverton¹ (*Polwhele*); St. Mary-church (*Rev. A. Neck*): *Fl. Dev.* Ilfracombe: *Rav.*—**C.** “One plant found by Mr. W. P. Cocks at Boyer’s cellars, but since destroyed:” *Polytech.* 1856. *Dwarf Elder.* *Danewort.*

This species is admitted into *C. B. S.* doubtfully for Devon, but certainly for Cornwall (p. 60). Its title to true nativity in Britain is questioned.

S. nigra (L.)—*E. B.* 476.—Woods and hedges.—**D.** Common. Frequent about Plymouth and Tavistock; Shaugh. Ivybridge: *Miss L.* About Torquay and St. Mary-church: *Tor. Fl.* North Devon: *N. D. H.*—**C.** Common. St. Stephens by Saltash; Calstock; near Lancellos. Frequent in hedges about Falmouth: *Polytech.* 1856. *Elder.*

Viburnum Linn. Guelder-rose.

V. Lantana (L.)—*E. B.* 331.—Hedges and thickets, chiefly on a calcareous soil.—**D.** Said by Jones and Kingston (*Fl. Dev.* p. 54) to be “frequent” in the county. It is, however, very rare about Plymouth, and few other localities are named for it. Mr. Briggs found it plentifully a few years since in some hedge-rows near Sparkwell (*Phytol.* n.s. vi. 256), but he has not seen it elsewhere about Plymouth; nor have I ever met with it. Brixham: *Miss L.* Branscombe; Totnes; Ashburton; Ilsington; Chudleigh: *Fl. Dev.* Anstice cove: *Lees* in *Phytol.* 1851, p. 238.

¹ Mr. Hannaford quotes this habitat in his *Flora Tottoniensis*. *Quære*—on his own authority or that of *Fl. Dev.*?

Babbicombe cliffs: *Trim.* — **C.** Gerrans (H. S. Herb): *Mrs. W. Lobb. Mealy Guelder-rose. Wayfaring-tree.*

According to *C.B.S.* the evidence as to the occurrence of this plant in Devon in a truly wild state is not satisfactory; while it is so for Cornwall.

V. Opulus (L.) — *E.B.* 332. — Hedges and thickets. — **D.** Frequent. Manadon wood and Widey, near Plymouth; between Saltram and Plympton; Tavistock. Near Brixham!: *Balkw.* Fardell, near Ivybridge: *Miss L.* Banks of the Dart; between Moreton and N. Bovey; Ilsington; Ashburton; Chudleigh: *Fl. Dev.* St. Mary-church; Bridestowe: *Rav.* Bradley woods, near Newton; Forde bog; Holy-street, near Chagford, in a bushy place by the r. Teign: *Tor. Fl.* Between Instow and Fremington: *Maw* in *Phytol.* 1853, p. 793. — **C.** Harewood, near Calstock, on the Tamar. Near Liskeard: *Pasc.* in *Phytol.* 1847, p. 944; and *Balkw.* (1867). Calenick, Kenwyn (H. S. Herb): *Miss W.* *Common Guelder-rose.*

Lonicera¹ Linn. Honeysuckle.

† *L. Caprifolium* (L.) — *E.B.* 799. — Thickets. — **D.** Unreported. — **C.** Restormal (H. S. Herb): *Rev.* — *Hill.* *Pale Perfoliate Honeysuckle.*

L. Periclymenum (L.) — *E. B.* 800. — Woods and hedges. — **D.** Common. This graceful and sweetly-scented climbing shrub may be found in almost every hedge about Plymouth; Staddon cliffs; Tavistock; banks of the Teign. Park-hill wood; bushy places about Meadfoot; Anstice cove, &c.: *Tor. Fl.* — **C.** Prevalent throughout the county. Between Torpoint and St. John's; Saltash; Calstock. Falmouth, "plentiful:" *Polytech.* 1856. *Honeysuckle. Woodbine.*

The Rev. W. S. Hore found, at Bovisand, near Plymouth, a variety of this honeysuckle, with leaves resembling those of the oak. (*Vide* paper read at

¹ "Named in honour of *Adam Lonicer*, a German botanist." — *H. B. F.*

the Meeting of the British Association held in Plymouth, August, 1841, printed in *Phytol.* 1842, p. 162.)

L. Xylosteum (L.)—*E.B.* 916.—Thickets.—**D.** Ham!, near Plymouth, but not indigenous. Hedge at Pill, near Barnstaple: *Phytol.* n.s. ii. 414. No doubt introduced.—**C.** Unreported. *Upright Fly Honeysuckle.*

This species appears to be native in this country only in Sussex (*Bab. Man.*).

Order XLII. RUBIACEÆ.

Sherardia¹ *Linn.* Field-Madder.

S. arvensis (L.)—*E.B.* 891.—Fields.—**D.**! and **C.** So common as to render citation of localities unnecessary.

Asperula *Linn.*

A. cynanchica (L.)—*E.B.* 33.—Dry banks in limestone districts.—**D.** Pinhey cliffs, near Lyme (*Mr. Jacob*): *Fl. Dev.* Landslip, near Exmouth: *Rev. J. Penrose* in *Rav.* Warberry hill, Torquay; Berry-head: *Stew. ib.*—**C.** "Reported to occur in the county:" *Pasc.* in *MS.* Catalogue furnished to *Wats.* *Quinancywort.*

A. odorata (L.)—*E.B.* 755.—Woods.—**D.** Not unfrequent. It is abundant in the woods on both sides of the Plym, particularly in Bickleigh vale; Maristow!. Warleigh wood: *W.D. & C. Fl.* Godwell, near Ivybridge, "but doubtfully wild:" *Miss L.* Lidford fall; Ilsington; Chudleigh; Lustleigh; Exmouth: *Fl. Dev.* Lee abbey, Lynmouth: *Clark* in *Phytol.* 1852, p. 743. Valley of the West Lyn: *N.D.H.*—**C.** Cardynham (*H.S. Herb.*): *Mrs. T. Grylls.* "Mr. Olver's field, &c. [Falmouth], an outcast from gardens:" *Polytech.* 1856. *Woodruff.*

[*A. arvensis* (L.)—*E.B.S.* 2792.—"Introduced" (*Bab. Man.*).—**D.** In Dr. Jacob's time this plant grew near Plymouth. It

¹ "Named in honour of *James Sherard*, an English botanist."—*H. B. F.*

is figured in his *W. D. & C. Fl.*, and the following habitat is therein cited:—"To the left, at the end of Longbridge, leading to Bickleigh vale. *C. A. Johns, Esq.*, most rare." It has, however, long since disappeared from that locality, and, so far as I am aware, is not known to occur elsewhere in Great Britain. *Blue Woodruff*.]

Dr. Jacob did not concur in the opinion that this species was introduced. He says, in the work quoted,—“This very interesting plant was first discovered in the habitat above-mentioned, in 1830, in a spot near where the rail-road¹ has been made, by *C. A. Johns, Esq., F.L.S.*, from whom I received my specimens. There can be no doubt, I should imagine, of the habitat being truly wild, and it is not improbable that the formation of the rail-road above-mentioned might be the cause of its appearance, by bringing the seeds within the power of vegetation. It was certainly known to Gerarde, whose plate of it is extremely good. It grew, according to him, “in many places of Essex, and divers other parts in sandy grounds.”

By the side of Dr. Jacob's opinion place that of Mr. Hewitt Cottrell Watson, who says of this species (*Cyb. Brit.* ii. 23) that it is “scarce deserving to be kept among English plants, even as an introduced species; its localities appearing to be transitory and uncertain.” “Who shall decide when doctors disagree?”

Galium Linn. Bedstraw.

G. cruciatum (With.)—*E.B.* 143. — Hedges and thickets. — **D.** Frequent. Saltram; near Lipson mill, on the road to Crabtree. Staddon heights!; very abundant about Totnes: *W. D. & C. Fl.* and *Gould.* (April 27th, 1868). Chudleigh: *J. B. T. Ap.* Ivy-bridge, “not very common:” *Miss L.* St. Mary-church; Ilfracombe: *Rav.* Warberry hill; Barton; Teignmouth road, &c.: *Tor. Fl.* — **C.** “Not common” (*W. D. & C. F.*). Between Penzance and Marazion. *Crosswort.*

G. tricornis (With.) — *E. B.* 1641. — Dry calcareous fields. — **D.** “A single plant by a path in a field at Down Thomas [near Plymouth], July 1st, 1865:” *Briggs in Journ. Bot.* iii. 350.—

¹ The Dartmoor granite rail-road.—*I.W.N.K.*

C. "Plentiful in one part of a wheat-field, between Trevol and St. John's, July 14th, 1865:" *id. et ib.* *Rough-fruited Corn Bedstraw*.

New to these counties, but most likely introduced. Somersetshire is given as its S. limit in *Cyb. Brit.* ii. 18.

G. Aparine (L.)—*E. B.* 816.—Hedges.—**D.** & **C.** So common that localities need not be cited. *Goose-Grass. Cleavers.*

G. erectum (Huds.)—*E. B.* 2067. — Banks and pastures. — **D.** Inserted in *Rav.*, but without localities. Near Plymouth (Mr. Banks):¹ *Hore* in *Phytol.* 1842, p. 163. — **C.** Dumeer (H. S. Herb.): *Mrs. T. Grylls. Upright Bedstraw.*

Appears in *C.B.S.* with the doubtful "o" attached to both counties.

G. Mollugo (L.)—*E. B.* 1673.—Hedges and thickets.—**D.**! & **C.** Abundant in every hedge in both counties. *Great Hedge Bedstraw.*

G. verum (L.) — *E. B.* 660. — Dry and sandy places. — **D.** Common. At Catdown!, Staddon heights, on the rocks of the Hoe, and elsewhere about Plymouth; Plymstock. Torquay and Paignton, very common: *Tor. Fl.* About Chudleigh: *J.B.T. Ap.* — **C.** Common along the coast of Whitsand bay, near Plymouth. "Pennance, Pendennis, and coast east of lighthouse, plentiful:" *Polytech.* 1856. St. Kevern and Coverack mouth: *Balkw. Yellow Bedstraw.*

G. saxatile (L.)—*E. B.* 815.—Heaths, and in loose and gravelly soil in elevated situations.—**D.**! Common. Roborough down; Bickleigh; Shaugh; Tavistock; Dartmeet; banks of Teign. Ivybridge: *Miss L. Anstice cove: Lees* in *Phytol.* 1851, p. 241. Abundant about Ilfracombe; Dartmoor: *Rav.* Babbicombe down: Forde, near Newton; Milber down; open places about Chagford, &c.: *Tor. Fl.* About Chudleigh: *J. B. T. Ap.* — **C.**

¹ Not included in Banks's *Plymouth and Devonport Flora*; but this may be accounted for from the fact that the work was never completed.

Mount Edgumbe, on the turf and by the walks; between Talland and Polperro. Budock bottoms, Pennance, &c., plentiful: *Polytech.* 1856. *Smooth Heath Bedstraw.*

G. sylvestre (Poll.)—*G. pusillum* Sm.—Limestone hills, rare.—**D.** Unknown.—**C.** Reported to occur in the county: *Pasc.* (Wats. MS.).

It has been certainly found on the Cheddar cliffs in Somersetshire by Mr. Borrer (*Cyb. Brit.* iii. 449). We should therefore search for it in this part of the Peninsula.

G. uliginosum (L.)—*E. B.* 1972.—Wet places.—**D.** Frequent. Bickleigh. Ivybridge: *Miss L.* Banks of the Dart, near Totnes; Ilsington; Bovey Tracey, &c.: *Fl. Dev.* Berry Pomeroy woods: *Stew. in Rav.* Banks of r. Teign, near Gidleigh: *Tor. Fl.*—**C.** Budock bottoms; banks of stream, College wood, “not uncommon:” *Polytech.* 1856. Between Fowey and St. Austle: *J. B. T.* *Rough Marsh Bedstraw.*

G. palustre (L.) — *G. Witheringii* (Sm.) *E. B.* 2206 (which is the more prevalent form with us) differs only by having rough edges to the leaves. — Wet places by ditches and rivers. — **D.** Frequent. Manadon wood; Roborough down; Shaugh; Tavistock; near Ugborough beacon!. Banks of the Dart; Forde bog, near Newton: *Stew. in Rav.* Lundy Island: *Rav.* About Chudleigh: *J. B. T. Ap.*—**C.** Marshes and banks of streams [about Falmouth], “plentiful:” *Polytech.* 1856. Scilly islands: *Towns. in Journ. Bot.* ii. 112.—*G. elongatum* (Presl.) *E. B.* 1857 (a very strong form, much larger in all respects) is found in the Scilly islands: *Towns. loc. cit.* *White Water Bedstraw.*

Rubia¹ *Linn.* **Madder.**

R. peregrina (L.)—*E. B.* 851.—“Stony and sandy thickets in

¹ “Named from *ruber*, red, from the red dye afforded by its species, especially *Rubia tinctorum*, which produces the true madder or Turkey-red of commerce.”—*H. B. F.*

the South" (*Bab. Man.*) Also in hedges. — **D.** It prefers situations near the sea. Rocks under the Hoe, Catdown quarries, and Laira quarries, Plymouth. Near Devonport!: *Jac.* Near Torquay: *Ward* in *Phytol.* 1842, p. 20. Teignmouth: *Jord.* ib. 1843, p. 827. Hedge-rows round Dawlish: *M.H.D.* Side of the road from Exeter to Dunsford: *Parf.* in *Rav.* In nearly every hedge about Torquay; plentiful on the Rock-walk: *Tor. Fl.* Hedges about St. Mary-church, Sidmouth, Exmouth, Ashburton, Ilsington, Chudleigh, &c.; rocks near the bridge at Bideford, on the road between Westleigh and Bideford, and about the neighbourhood of Barnstaple (*Dr. Wavell*): *Fl. Dev.* Northam, N.D.: *Maw* in *Phytol.* 1853, p. 793. — **C.** Between Trematon and Anthony passage. Near Craffthole: *Pasc.* in *Phytol.* 1847, p. 943. Penzance: *Gibs.* ib. 1846, p. 678. Pennance, Pen-dennis, St. Anthony, &c., "not uncommon:" *Polytech.* 1856.

Mr. Jones says, in his *Botanical Tour*, that he found, near Craffthole, "a variety if not a distinct species of *Rubia peregrina*, the same which is mentioned in the *Botanists' Guide* by Mr. Dillwyn as growing wild on the cliffs at Dover." I am not acquainted with it.

Order XLIII. VALERIANACEÆ.

Centranthus Cand.

C. ruber (DC.)—*Valeriana* Sm., *E.B.* 1531.—"Chalk-pits and old walls" (*Bab. Man.*) — **D.** On the limestone rocks at the end of Durnford-street!, and on garden walls, Stonehouse; on walls at Compton; in similar situations at Stoke; but not perhaps truly wild in any of these places. Caton; Paignton: *Miss L.* Exeter; Dawlish; Ashburton; Teignmouth; Dartmouth; Tor Abbey, &c.: *Fl. Dev.* With white flowers on the old city walls at Exeter: *Parf.* in *Rav.* Torquay; Braunton: *Rav.* With white flowers on Dawlish cliffs: *Jord.* in *Phytol.* 1843, p. 827. Brixham: *Trim.* MS. — **C.** Bodinnick and Fowey: *Pasc.* in *Phytol.* 1847, p. 942. Cadgewith (between Helford Ferry and Helstone); Marazion:

J.B.T. Cliffs at Newlyn: *Gibs.* in *Phytol.* 1846, p. 677. Old garden walls [Falmouth], "not uncommon:" *Polytech.* 1856. *Red Valerian.*

This species is regarded by Mr. Watson as an alien (*Cyb. Brit.* ii. 24). He says it is "more or less naturalized in some 20 to 50 counties."

Valeriana Linn. Valerian.

V. officinalis (L.)—*E.B.* 698.—Ditches, banks of streams, wet meadows, and damp hedges.—**D.** Frequent. Saltram and Manadon wood, near Plymouth; Bickleigh; Tavistock; banks of the Teign. Side of a stream at the back of Forde-house, Newton; Forde bog; side of Stover canal: *Tor. Fl.* Chudleigh and Moreton: *J.B.T. Ap.* Linton: *N.D.H.*—**C.** Near Calstock; Lostwithiel. College, Budock bottoms, &c, "not common:" *Polytech.* 1856. *Great Valerian.*

V. sambucifolia ("Mikan.")—*V. officinalis* Sm., *E.B.* 698.—Damp places.—**D.** Near Linton (June, 1850): *Bab.* in *Bot. Gaz.* ii. 251. Found in the same locality by Mr. T. B. Flower: *Rav.*

V. dioica (L.)—*E.B.* 628.—Boggy places.—**D.** Wet meadows, occasionally. In a boggy field, near Colyton; St. Mary-church (Rev. A. Neck); Holcombe wood, near Woodbury (Miss Filmore): *Fl. Dev.* Near Newton: *Jord.* in *Phytol.* 1843, p. 827. Marshes near Folly: *Fl. Tot.* Milber down: *Tor. Fl.*—**C.** Cardynham (H. S. Herb.): *Mrs. T. Grylls.* There is also the authority of Mr. Pascoe's list furnished to Mr. Watson for the occurrence of this plant in Cornwall (*Cyb. Brit.* iii. 450). *Small Marsh Valerian.*

Valerianella Moench.

V. olitoria (Moench).—*E.B.* 811. *Fedia* Sm.—Corn-fields, hedges, and banks.—**D.** Common. There is scarcely a field or hedge about Plymouth where it may not be seen in the latter part of April, and throughout May and June. Common in fields on

the Warberry-hill, &c. [Torquay]: *Tor. Fl.*—**C.** Also common in this county. Sennen cove: *Bail. Corn Salad.*

† *V. carinata* (Loisel.) — Fedia *E.B.S.* 2810. — Hedge-banks, rare.—**D.** Near Dawlish (Sept. 1848): *Mr. A. Henfrey* in *Bot. Gaz.* i. 193. Hele, near Ilfracombe: *Bor.* in *Rav. Lambs' Lettuce.*

V. Auricula (DC.) — Fedia *E.B.S.* 2809. *V. dentata* DC. — Cultivated land.—**D.** “Common in a wheat-field at Wembury [near Plymouth], and seen elsewhere in that neighbourhood, in July, 1865; also between that place and Down Thomas, growing with *F. dentata* :” *Briggs* in *Journ. Bot.* iii. 351. Bolt-head (Professor Babington): *Hore* in *Phytol.* 1842, p. 161. In a field about half a mile from Dawlish toward Mount Pleasant, growing with *F. dentata* (Sept., 1848): *Mr. A. Henfrey* in *Bot. Gaz.* i. 193. Torquay: *Bor.* in *Rav.* Broadclyst: *Parf.* ib. Morteheo: *N.D.H.* —**C.** In a waste by the roadside, near Antony, with *F. dentata*; cornfield between Trevol and St. John's: *Briggs* loc. cit. Landulph (Rev. Mr. Bree)¹: *Hore* loc. cit.

In a “Note on some of the British Valerianellas,” Mr. Arthur Henfrey, after saying that Dr. Bromfield “more than suspects *V. Auricula* to be a mere variety of *V. dentata*,” thus writes in *Bot. Gaz.* i. 109 :—

“When botanizing in the neighbourhood of Dawlish, last September [1848], I found plants, side by side, in a corn-field, undistinguishable by any character but that of the fruit; and as the inflation of the barren cells in *V. Auricula* rendered the fruits just so much larger than those of *V. dentata*, I think that this must be regarded as an accidental condition of the latter plant. In another field not far from Dawlish, in the direction of Exeter, where a potato crop had been destroyed by the ‘disease,’ and which had apparently been well manured, I found a *Valerianella* growing in profusion all over the field, and, on examination of several fruits, it proved to be *V. carinata*. I gathered a number of specimens and dried them. On looking them over after my return to town, I was surprised to find several of the specimens with the fruit of *V. olitoria*. The *carinata* plants have the cymes fuller of flowers, while in the *olitoria* the stems are rather stouter, the hairy lines upon them more distinct, as are also the cilia of the bracts; the bracts are a good deal larger, and extend beyond the flowers, while in my specimens of *carinata* they are about equal to the flowers. The difference on the whole is, that the *olitoria* form has all its vegetative parts more luxuriant and bears fewer flowers, while in *carinata* the flowers and fruits are especially developed. Dr. Bromfield mentions that M. de St. Amans (Flore

¹ According to Hooker, Mr. Bree's plant is the var. *V. tridentata* (Wood's MS.), described in Koch's *Flora Germanica*, p. 373.

d'Agen, 14) makes them varieties, and says that he has found fruit of both on one plant. I cannot find both kinds on any of my specimens, but agree with Dr. Bromfield in the inclination to believe that *V. carinata* is related to *V. olitoria* in the same way as *V. Auricula* is to *V. dentata*, and that the value of *carinata* and *Auricula* as distinct species is problematical."

V. dentata (Deitr.)—*Fedia* Sm., *E.B.* 1370. *V. Morisonii*, DC.—Corn-fields and banks.—**D.** Frequent. A very common weed in corn-fields about Plymouth. Shaugh: *W. D. & C. F.* Near Dawlish (1848): *Henf.* in *Bot. Gaz.* i. 193. Torquay; St. Marychurch: *Stew.* in *Rav.* Little Weston: *Fl. Sid.* Harpford, near Sidmouth: *Miss Atw.* in *Phytol.* 1853, p. 1097. Moreton; North Bovey; Lustleigh, &c.: *Fl. Dev.* Near Barnstaple and Okehampton: *Rav.* Near Ilfracombe: *Scriv.* ib. Tiverton: *Mack.* ib.—**C.** Between Torpoint and St. John's; Saltash!; near Lancellos. Near Craffthole: *J. B. T.* Near Sheviock: *W. D. & C. F.* Corn-fields [about Falmouth], "plentiful:" *Polytech.* 1856. Sennen cove: *Bail.* *Narrow-fruited Corn Salad.*

Order XLIV. DIPSACACEÆ.

Dipsacus Linn. Teasel.

D. sylvestris (L.)—*E. B.* 1032. —Hedges and roadsides. —**D.** "Frequent in the southern parts of the county, but less frequent in the northern parts" (*Fl. Dev.*). Common about Plymouth, particularly on limestone, *e.g.* Catdown! and Oreston quarries, Mount Batten, Turnchapel, &c.; Newton Ferrers. Torquay; Chudleigh; Exminster; Exeter, &c.: *Fl. Dev.* Paignton: *Tor. Fl.* Hillsborough: *N.D.H.*—**C.** Although I distinctly remember seeing this plant many places in Cornwall, I have not noted any particular habitats. "Pendennis, Mainporth, and Helford, plentiful; very common in the parish of St. Anthony:" *Polytech.* 1856. *Wild Teasel.*

[*D. Fullonum* (L.)—*F.B.* 2080.—"West of England, but not wild" (*Bab. Man.*)—**D.** In a hedge between Exminster and

Alphington; in a hedge near Kenford (Rev. W. Hincks and Mr. Jacob): *Fl. Dev.* Braunton burrows (Mr. Gosse): *N.H.D. Teasel.*]

Unfortunately I do not possess and cannot get a copy of *Watson's New Botanists' Guide*, it being out of print. It is stated there (*vide* Rav. p. 34) that this species is "plentiful in the South-hams and common in North Devon." Mr. Ravenshaw says—"This must be a mistake." I think so too.

***Knautia*¹ Coult.**

K. arvensis (Coult.)—*E.B.* 659.—Fields.—**D.** Common. About Plymouth; Plymstock; Tavistock; banks of the Teign, above Fingal bridge. About Chudleigh: *J.B.T. Ap.*—**C.** Wear, Maker; near St. Germans; Calstock. Pastures and corn-fields [Falmouth], common: *Polytech.* 1856. *Field Scabious.*

***Scabiosa* Linn. Scabious.**

S. succisa (L.)—*E.B.* 878.—Meadows and pastures.—**D.** Frequent. Manadon wood, near Plymouth. Berry-head; Babbicombe cliffs, &c.: *Trim.* MS. Anstice cove, on the rocks dividing the white beach from the cove: *Tor. Fl.* About Chudleigh: *J. B. T. Ap.*—**C.** Moist places and banks [about Falmouth], "common:" *Polytech.* 1856. It is found rarely with white flowers at Trigoniggy marsh: *ib.* Miss W. notices a pink variety (H. S. Herb.) *Devil's bit.*

S. columbaria (L.)—*E.B.* 1311.—On a calcareous soil.—**D.** Cliffs on the southern coast. Teignmouth; Torquay; Brixham: *Fl. Dev.* Anstice cove: *Lees* in *Phytol.* 1851, p. 241. Berry-head: *Brent* (1863). St Mary-church; Dawlish: *Tor. Fl.* Dry pastures [about Totnes], and occasionally with white flowers: *Fl. Tot.* Between Bideford and Instow: *Maw* in *Phytol.* 1853, p. 793.—**C.** "Found in the neighbourhood [of Falmouth] by Mr. W. P. Cocks and Mr. Lovell Squire:" *Polytech.* 1856. *Small Scabious.*

¹ "Named in honour of *Christopher Knaut*, a botanist of Saxony, who flourished in the latter half of the 17th century."—*H.B.F.*

Order XLV. COMPOSITÆ.

Eupatorium Linn. Hemp-Agrimony.

E. cannabinum (L.)—*E.B.* 428.—Banks of streams, wet meadows and hedges.—**D.** Common. Saltram; Staddon cliffs; Tavistock; banks of the Teign. Ivybridge!: *Miss H.* "Everywhere" [about Torquay]: *Trim. MS.* Chudleigh: *J. B. T. Ap.* Church-path, Ilfracombe: *N.D.H.*—**C.** Between St. Germans and Landrake. Ditches and banks of streams [about Falmouth], plentiful: *Polytech.* 1856.

Petasites Gaert. Butterbur.

P. vulgaris (Desf.)—*Tussilago Petasites* Sm., *E.B.* 431 & 430. Swamps.—**D.** "Common" (*Fl. Dev.*) Plympton!, in an osier bed near the church-yard. Banks of the Dart: *Fl. Tot.* About Chudleigh: *J.B.T. Ap.* Hele; Combmartin: *N.D.H.*—**C.** Near Hessenford: *Pasc.* in *Phytol.* 1847, p. 942. Field near Ashfield, "rare:" *Polytech.* 1856.

[*P. fragrans* (Presl).—"Established in some places in the South" (*Bab. Man.*)—**D.** Abundant on the limestone rubble heaps, West Hoe, and on the walls of the Green-bank estate, Plymouth; Lin-ketty-lane, Widey, near Plymouth. Bank on the old Newton road, Torquay: *Park.* in *Rav.* Ilfracombe: *Rav.* Newport hill, near Barnstaple: *N.B.G.*—**C.** St. John's. "Road-sides, Penwerris and Tehidy-terraces, &c. [Falmouth], common:" *Polytech.* 1856. *Sweet Coltsfoot.*]

Tussilago Linn. Coltsfoot.

T. Farfara (L.)—*E.B.* 429.—Moist limestone and clayey soils.—**D.** Common. In profusion in Catdown quarries, Plymouth!, this year (1868); Laira embankment; tram-road, near Longbridge; Saltram. Torquay: *Tor. Fl.*—**C.** Calstock; between Torpoint

and Antony. Borders of fields and moist places [about Falmouth], plentiful : *Polytech.* 1856.

Aster *Linn.* Starwort.

A. Tripolium (L.)—*E.B.* 87. *Tripolium vulgare* DC.—Muddy salt marshes.—**D.** Common. Keyham, near Devonport ; Laira, near Plymouth. Teignmouth ; Exmouth, the var. with the outer or purple florets wanting : *Jord.* in *Phytol.* 1843, p. 828. Bridgetown ; banks of the Dart : *Fl. Tot.*—**C.** Logan rock ; Lands-end. Penzance : *Gibs.* in *Phytol.* 1846, p. 677. “ Found by Mr. H. Skinner on the rocks, Pennance, rare : ” *Polytech.* 1856. *Sea Starwort.*

Erigeron *Linn.* Fleabane.

E. acris (L.)—*E.B.* 1158.—Dry gravelly places and walls. — **D.** Braunton burrows : *Stew.* in *Rav.* Rock hill, Halberton : *Mack.* *ib.* *Blue Fleabane.*

Bellis *Linn.* Daisy.

B. perennis (L.)—*E.B.* 424.—Banks and pastures.—**D.!** and **C.** Common.

Solidago *Linn.* Golden Rod.

S. Virgaurea (L.)—*E.B.* 301.—Woods and thickets.—**D.!** Common. Saltram, near Plymouth ; Tavistock ; banks of r. Teign. Anstice cove : *Lees* in *Phytol.* 1851, p. 241. Dartington ; Littlehempston ; Ipplepen ; Ambrook ; Ashprington : *Fl. Tot.* Parkhill, near the quarry ; Warberry-hill ; Petit tor : *Tor. Fl.* “ Everywhere on the cliffs ” [Torquay] : *Trim.* MS. About Chudleigh : *J. B. T. Ap.* — **C.** Calstock. Hedges and thickets [about Falmouth], plentiful : *Polytech.* 1856.

***Linosyris* Cand.**

L. vulgaris (Cass.)—*Chrysocoma Linosyris* Sm., *E.B.* 2505.—Limestone cliffs, rare.—**D.** “Berry-head (discovered in 1782 by Rev. T. Holbeck); covering a large space, edges of the Torbay cliffs, in 1864 (Roman ruins once near the spot):” *Bartl.* MS. notes on margin of a copy of *Fl. Dev.* in P. I. Lib. Mr. Flower has collected it at Berry-head. The Rev. W. S. Hore also cites this locality for the plant in his paper on Devonshire and Cornish plants read at the meeting of the British Association held in Plymouth, August, 1841. Near Brixham. This habitat was named to me by a lady who had lived in the neighbourhood, but whether or not identical with the Berry-head station I cannot say—probably it is. N. Devon: *N.D.H.* *Goldilocks*.

This species being so rare, it may not be amiss to quote from *Cyb. Brit.* (ii. 95) its other recorded habitats:—“Worle Hill, in Somerset, and Ormes Head in Caernarvonshire, are the known and certain localities; unless it may have lately become extinct in the second habitat, where it was sought unsuccessfully by Dr. J. D. Hooker, about 1846. A specimen was brought to the Rev. A. Bloxham, by a lady who had found it on Portland isle; and a single plant of it was found by Sir W. C. Trevelyan, in 1825, between Brighton and Shoreham.”

***Inula* Linn.**

† *I. Helenium* (L.)—*E.B.* 1546.—Moist pastures.—**D.** Orchards at Rora, near Ilsington, and at Christowe: *Fl. Dev.*—**C.** Trereife, near Penzance: *Curn.* in *Phytol.* 1844, p. 1143. “Found in the neighbourhood [of Falmouth] by Mr. W. P. Cocks:” *Polytech.* 1856. Common in a hedge at Rosenithon; Reggor; hedge of farm-yard, Grade: *Balkw.* (1867). *Elecampane*.

I. Conyza (DC.)—*Conyza squarrosa* Sm., *E.B.* 1195.—Calcareous soils.—**D.** Not common throughout the county, but frequent about Plymouth, *e. g.* Tothill-lane and elsewhere; Newton Ferrers. Anstice cove: *Lees* in *Phytol.* 1851, p. 241. Hedges about Totnes;

Hempston wood ; Railway line : *Fl. Tot.* Ilsington ; Chudleigh ; Exeter ; Tiverton : *Fl. Dev.* Park-hill ; Meadfoot cliffs ; Warberry-hill : *Tor. Fl.* Shaldon ; Ilfracombe ; Lynton ; Clovelly : *Rav.* Hedges about Southcott, &c., North Devon : *Maw* in *Phytol.* 1853, p. 793.—**C.** Near Trematon ; near St Germans ; Calstock. *Vergan!* : *Miss H.* Near Fowey : *J.B.T.* Near Pennance mills and Mawnan, “rare :” *Polytech.* 1856. *Ploughman's Spikenard.*

I. crithmoides (L.)—*E.B.* 68.—On rocks and in muddy salt marshes by the sea.—**D.** Cliffs on the East side of Plymouth Sound : *War.* in *Rav.* Bovisand : *Flow.* *ib.* (Rev. W. S. Hore cites this locality in the paper already referred to.) Staddon heights, near the fort : *W. D. & C. F.* I cannot account for not having myself seen this plant in the habitats named (which must be all in proximity to each other, if not identical), as I have frequently gone over the ground. Revelstoke : *Jul.* in *Nat.* iii. 118.—**C.** Whitsand bay !, near Plymouth. A specimen from this locality, collected by Rev. C. A. Johns, is in H. S. Herb. *Golden Samphire.*

***Pulicaria* Gaert.**

P. dysenterica (Gaert.)—*Inula* *E.B.* 1115.—Damp places.—**D.** Common. Chelson meadow, near Plymouth !, and many other places in the neighbourhood. Goodrington ; Teignmouth ; Exmouth : *Tor. Fl.* “Everywhere very common” [about Torquay] : *Trim.* MS. About Chudleigh : *J.B.T. Ap.*—**C.** Calstock ; Penzance. Ditches and moist meadows [Falmouth], “abundant :” *Polytech.* 1856. *Common Fleabane.*

***Bidens* Linn.**

B. tripartita (L.)—*E.B.* 1113.—Marshy places.—**D.** Vale between Milehouse and Deadlake, Plymouth : *Bank.* (1853). Saltash road : *Bartl.* (1853). Ditches about Chudleigh : *Fl. Dev.* Forde bog : *Stew.* in *Rav.* Near Braunton : *Scriv.* *ib.* Tiverton : *Mack.* *ib.*

Clyst St. George: *Parf.* ib.—**C.**! Marshes, Bodmin (H. S. Herb.): *Mrs. T. Grylls.* *Trifid Bur-Marigold.*

B. cernua (L.)—*E.B.* 1114. — Watery places.—**D.** Side of a ditch near the head weir on the Exe (Mr. Jacob): *Fl. Dev.* Goodrington marsh: *Stew.* and *Park.* in *Rav.* Tiverton: *Mack.* ib. Clyst St. George: *Parf.* ib. — **C.** Tregony!: *Hore.* Marshes, Bodmin (H. S. Herb.): *Mrs. T. Grylls.* Swanpool, “rather plentiful:” *Polytech.* 1856. *Nodding Bur-Marigold.*

Achillea Linn. Yarrow.

A. Ptarmica (L.)—*E.B.* 757.—Boggy pastures and heaths, moist meadows and thickets. — **D.** Frequent. Near Exminster!; near Tavistock. Ivybridge, “common:” *Miss L.* Banks of the Teign: *Jord.* in *Phytol.* 1843, p. 828. Near Shaugh bridge: *Read.* (1862). Stoke-hill, Exeter: *Parf.* “Hedge in Ashburton road, near Dartington lane, not common:” *Fl. Tot.* Chudleigh; Ilsington; Moreton; Okehampton; Woodbury hill, &c.: *Fl. Dev.* Road to Barton-ridge; banks of the Teign: *Tor. Fl.* Ilfracombe: *Rav.*—**C.** Between Antony passage and Trevollard. “Trogenver, College, Bar, &c., not common:” *Polytech.* 1856. Downs near Mullian: *J.B.T.* *Sneezewort.*

A. Millefolium (L.) — *E.B.* 758. — Pastures, hedges, and waste ground.—**D.** Common. Very plentiful about Plymouth!. To particularize stations is unnecessary.—**C.** Also common in this county. *Yarrow.* *Millefoil.*

Anthemis Linn. Chamomile.

A. arvensis (L.)—*E.B.* 602. — “Borders of cultivated fields, rare” (*Bab. Man*)—**D.** “Frequent” (*Fl. Dev.*) Moreton; Ilsington, &c.: *Fl. Dev.* St. Marychurch: *J.B.T.*—**C.** Corn-fields, Kea (H. S. Herb.): *Miss W.* *Corn Chamomile.*

Devon is named as the South limit of this species in *Cyb. Brit.* (ii. 130). The doubtful "o" is attached to it for Cornwall in *C. B. S.*, in consequence of Mr. Pascoe marking it in his list as "reported to occur" there. He had not seen it in that county himself (*Cyb. Brit.* iii. 463).

[In *N.D.H.* *Anthemis anglica Spr.* is recorded as found at Morthoe. There is, however, considerable doubt as to the accuracy of the record. *Vide* Bab. Man. 6th ed. p. 187, where Sunderland is mentioned as the only habitat; and as to the true plant occurring even in that locality, see Mr. Watson's remarks in *Cyb. Brit.* iii. 129. He thinks it probable that *Pyrethrum maritimum* was the plant really intended in most of the habitats that have been named.]

A. Cotula (L.)—*E.B.* 1772.—Fields and waste places.—**D.** Frequent. Near Wembury. Warberry hill, Torquay: *Stew.* in *Rav.* About Chudleigh: *J.B.T. Ap.*—**C.** Between Torpoint and St. John's; between Looe and Talland. Fowey (H. S. Herb.): *Mrs. T. Grylls.* Corn-fields and waste places [about Falmouth], "not common:" *Polytech.* 1856. *Stinking Chamomile.*

A. nobilis (L.)—*E.B.* 980.—Gravelly, heathy, and sandy places.—**D.** Not uncommon. Shaugh!; Cornwood; Tavistock; Portle-mouth. Haldon: *Jord.* in *Phytol.* 1843, p. 828. Sidmouth: *Miss Atw.* ib. 1853, p. 1097. Bridgetown marsh, &c.: *Fl. Tot.* St. Marychurch: *Tor. Fl.* Paignton: *Trim.* MS. Bovey Heathfield; Milburn down, near Newton Abbot; boggy ground near New-bridge on the Dart; banks of the Meavy, below Meavy (Rev. Mr. Tozer): *Fl. Dev.* Near the "Schoolmaster" inn, on the Barnstaple road from Exeter; Slapton lea: *N.B.G.* Tiverton: *Mack.* in *Rav.* Exeter: *Parf.* ib.—**C.** Abundant at Land's-end: *Briggs* MS. Penzance: *Gibs.* in *Phytol.* 1846, p. 678. Swanpool, &c. "not uncommon:" *Polytech.* 1856. Devoran; Manacran; Constantine; Severgan: *Balkw.* Between Fowey and St. Austle: *J. B. T. Chamomile.*

Matricaria Linn. Feverfew.

‡ *M. Parthenium* (L.)—*E.B.* 1231. *Pyrethrum* Sm. — Waste

places, "not very common" (*Bab. Man.*)—**D.** Occasionally. Rocks, West Hoe, Plymouth (1861); Crabtree, near Plymouth; Weston mills, near Devonport; near Tamerton; Lidford; Tavistock; Lustleigh. Berry; Yarner, &c.: *Fl. Tot.* Chudleigh; Ilesington: *Fl. Dev.* Clovelly; Lynmouth; Ilfracombe: *Rav.* Kingskerswell: *Tor. Fl.* Goodrington: *Trim.* MS.—**C.** Hedges and waste places near houses [Falmouth], "but scarcely wild:" *Polytech.* 1856. *Feverfew.*

M. inodora (L.)—*E.B.* 676. *Pyrethrum* Sm.—Fields and waste places.—**D.** Common about Plymouth; banks of the Teign. Ivy-bridge!: *Miss H.* Water-side at Exwick (Mr. Jacob); Paignton sands (Rev. A. Neck): *Fl. Dev.* Fields and pastures about Torquay: *Tor. Fl.*—**C.** Calstock; Antony passage; Penzance. Corn-fields [Falmouth], plentiful: *Polytech.* 1856. Looe-bridge: *J.B.T.* *Scentless Feverfew.*

—*β. salina.*—*E.B.* 979.—**D.** Salt marshes, Teignmouth: *Jord.* in *Phytol.* 1843, p. 828. Paignton sands; Topsham, &c.: *Rav.* Meadfoot shore: *Tor. Fl.*—**C.** Sandy shore, near Marazion: *Gibs.* in *Phytol.* 1846, p. 677. "Embankments, Penryn river, &c., plentiful:" *Polytech.* 1856. Devoran (fl. aromatic when cut): *Balkw.*

M. Chamomilla (L.)—*E.B.* 1232.—Cultivated and waste ground.—**D.** Marsh mills, Longbridge, near Plymouth: *Gould.* Bovey Heathfield: *Fl. Dev.* Ilfracombe: *Rav.* Very common in the vicinity of Torquay, &c.: *Tor. Fl.*—**C.**! Corn-field, Pennance; St. Anthony, "not common:" *Polytech.* 1856. Looe-bridge: *J.B.T.* *Wild Chamomile.*

Chrysanthemum Linn.

C. Leucanthemum (L.)—*E.B.* 601.—Fields and hedges frequently.—**D.** Common. It would be superfluous to cite habitats.—**C.** Equally common. *Great White Ox-eye.*

† *C. segetum* (L.) — *E.B.* 540. — Corn-fields. — **D.** Occasionally. Not common about Plymouth. I once found a specimen at Cat-down, and there is one in the Museum of the Institution, collected near Plymouth by *Miss H. Caton*, “rare :” *Miss L.* Warberry-hill; Chudleigh; Exmouth: *Tor. Fl.* More abundant in the North of Devon. About Totnes: *Fl. Tot.* Dawlish; Exminster; Topsham; Christowe; Chudleigh, &c.: *Fl. Dev.* — **C.** Boscastle in profusion in corn-fields (1861) *St. Stethean*, near Falmouth. *Balkw.* (1864). *Wendron: id.* (1866). “One plant only at Falmouth; but plentiful in a corn-field, *St. Anthony:*” *Polytech.* 1856. *Corn Marigold.*

[It is useless to retain *Diotis maritima* in a catalogue of Devonshire plants, its reported existence on the coast (*auct.* Withering) being uncorroborated. Its actual occurrence in either of our counties is doubtful (*vide Cyb. Brit.* ii. 95).]

Artemisia *Linn.* Wormwood.

A. Absinthium (L.) — *E.B.* 1230. — Waste ground. — **D.** ! Frequent. Wembury; near Stokefleming; Cudlip-town, near Tavistock; Blackstone; Lidford castle, plentiful; Tavistock. Teignmouth: *Jord.* in *Phytol.* 1843, p. 828. Bickington: *Fl. Tot.* Near Hope's-nose: *Tor. Fl.* In the neighbourhood of Chudleigh: *J.B.T. Ap.* Clovelly; Lynmouth; Ilfracombe: *Rav.* Dunsford: *Parf.* in *Rav.* — **C.** Trevollard, near Saltash; Land's-end. Between Polbathick and Hessenford: *Balkw.* “Parish of *St. Anthony*, and old garden-ground, *Pendennis*, not common :” *Polytech.* 1856. *Common Wormwood.*

A. campestris (L.) — *E.B.* 338. — **D.** Banks of the Teign: *Jord.* in *Phytol.* 1843, p. 828. It appears in *C.B.S.* as occurring in Devon, but with the brand “o.”

According to *Bab. Man.* this species is rare, and confined to Norfolk and Suffolk. We may therefore suspect an error in locating it in Devonshire.

Mr. Watson gives Suffolk (*Cyb. Brit.* ii. 97) as the South limit of this species. He considers Mr. Jordan's habitat in Devon requires confirmation.

A. vulgaris (L.)—*E.B.* 978.—Hedges and waste ground.—**D.** ! Common. Frequent about Plymouth, *e.g.* near Manadon and Longbridge; Tavistock; Newton Ferrers. Railway line, near Fishacre bridge; about Paignton; Goodrington; Ashprington; Hempston: *Fl. Tot.* Torre abbey; waste places near Torquay; St. Marychurch; Teignmouth, &c.: *Tor. Fl.* In the vicinity of Chudleigh: *J.B.T. Ap.*—**C.** Near Cawsand; Rame; Antony passage. St. Kevern (H. S. Herb.): *Johns.* About Falmouth, “not common:” *Polytech.* 1856. St. Anthony and Meneage: *Balkw.* *Mugwort.*

A. maritima (L.)—*E.B.* 1706.—Salt marshes.—**D.** Along the sea-coast, frequent. Paignton: *Tor. Fl.* Sidmouth: *Fl. Sid.* Teignmouth beach: *Jord.* in *Phytol.* 1843, p. 828. Field near Goodrington, on Brixham road: *Fl. Tot.* Braunton: *N.D.H.*—**C.** Trewhiddle (reported to Mr. Pascoe): *Wats.* MS. *Drooping-flowered Sea-Wormwood.*

—**β.** *A. gallica* (Willd.)—*E.B.* 1001.—**D.** Mouth of the Otter: *Fl. Sid.* Near Bideford: *Maw* in *Phytol.* 1853, p. 788. *Upright-flowered Sea-Wormwood.*

This variety is frequently found growing side by side with its type.

Tanacetum Linn. Tansy.

T. vulgare (L.)—*E.B.* 1229.—Waysides.—**D.** Frequent. Tavistock; Cudlip-town, near Tavistock; between Exeter and Alphington!; Chagford. Vicarage cross, Harberton; Follaton; Totnes-down hill: *Fl. Tot.* St. Mary-church; Kingskerswell (Rev. A. Neck): *Fl. Dev.* North Bovey; Moreton; Chudleigh; Tiverton: *ib.* Babbicombe; Newton road, between Kingskerswell and Newton; lane by the side of the cricket-ground at Highweek: *Tor. Fl.*—**C.** Whitsand bay; Boscastle. Old garden ground, Pendennis, abundant: *Polytech.* 1856. St. Kevern: *Balkw.* St. Michaels, near Redruth: *J. B. T.*

Filago Linn. Cudweed.

F. germanica (L.) — *Gnaphalium* Sm., *E. B.* 946. — Dry fields and waste places. — **D.** Common. Shaugh; near Ivybridge!; Wembury; Bickleigh. Near Ambrook: *Fl. Tot.* Park-hill; Warberry-hill, &c.: *Tor. Fl.* About Chudleigh: *J. B. T. Ap.* Clovelly: *N. D. H.* — **C.**! Whitsand bay; between Looe and Polperro. Common about Falmouth: *Polytech.* 1856.

F. minima (Fr.) — *E. B.* 1157. *Gnaphalium* Sm. Dry sandy and gravelly places. — **D.** Dawlish warren: *Jord.* (1845). Exmouth warren; Widdecombe-in-the-Moor (Rev. A. Neck): *Fl. Dev.* Middledon down, near Chagford: *Tor. Fl.* About Chudleigh: *J. B. T. Ap.* Field near Parker's barn; field at Wildwood; Berry Pomeroy; near Bidwell copse: *Fl. Tot.* Exwick; Clovelly: *Rav.* — **C.** "Plentiful" [about Falmouth]: *Polytech.* 1856.

Although, on the authority of Mr. Pascoe's list already referred to (*Cyb. Brit.* iii. 458), the occurrence of this plant in Cornwall may be unquestioned, yet it would be satisfactory to have Mr. Bastian's record of its being "plentiful" about Falmouth confirmed.

Gnaphalium Linn.

G. uliginosum (L.) — *E. B.* 1194. — Wet sandy places. — **D.** Common. Shaugh, and other places near Plymouth. Orchard at Hampstead: *Fl. Tot.* Paignton; Ilsham; Goodrington: *Tor. Fl.* Lundy island: *N. D. H.* — **C.** Trevollard, near Saltash. Near Millbrook!: *Jac.* Near Tregenvver (W. P. Cocks): *Polytech.* 1856. *Marsh Cudweed.*

G. sylvaticum (L.) — *G. rectum* Sm., *E. B.* 124. — Woods and heaths. — **D.** Shaugh bridge!: *Hore* in *Phytol.* 1842. (Mr. F. H. Goulding has collected it in this habitat.) Chagford; Harpford wood; Dunsford: *Rav.* — **C.** It has not been reported for this county.

Mr. Watson says of this plant (*Cyb. Brit.* ii. 102), "apparently very rare in the Peninsula, for which I find only one locality on record, namely, in Devon."

Antennaria *R. Br.*

A. dioica (Gaert.)—*E.B.* 267. *Gnaphalium* Sm.—“Mountain heaths” (*Bab.*)—**D.** Dartmoor: *Per. Dart.* and *Dr. Broughton* as cited in *Rav.* Roborough down: *Briggs.* *Vide* Curator’s Report for 1864 of Thirsk Botanical Exchange Club, in *Journ. Bot.* iii. 118, where it is stated that this species is “new to Devonshire.” *Quære*—Was its presence on Dartmoor disputed?—**C.** Goonhavern downs, Newlyn (H. S. Herb.): *Miss W. Camborne: Hore* in *Phytol.* 1842, p. 163 (*auct. Watson’s Botanist’s Guide*). Mr. Watson says (*Cyb. Brit.* ii. 100) that he has “seen it sparingly in one spot in Cornwall.”

Doronicum *Linn.* Leopard’s-bane.

† *D. Pardalianches* (L.)—*E.B.S.* 2654.—Damp and hilly woods and pastures, rare.—**D.** Widey, near Plymouth (1849), but perhaps not truly wild. Countess weir: *War.* in *Rav.*—**C.** Unreported.

“Most of its habitats [in Britain] are recorded with distrust, or with admissions that it is an escape from gardens.”—*Cyb. Brit.* ii. 121.

† *D. plantagineum* (L. ?)—*E.B.* 630 (excl. leaf).—Damp places, rare.—**D.** Unreported.—**C.** Pendarves (H. S. Herb.): *Mr. Mit-chinson.*

Equally an alien with the preceding species, and probably nowhere truly wild.

Senecio *Linn.* Ragwort.

S. vulgaris (L.)—*E.B.* 747.—**D.** and **C.** Common weed. *Groundsel.*

S. sylvaticus (L.)—*E.B.* 748.—Dry and gravelly places.—**D.** Frequent. Staddon heights, near Plymouth. Meadfoot, near Torquay: *Stew.* in *Rav.* Hope’s-nose, near the raised beach: *Tor. Fl.* Chudleigh: *J.B.T. Ap.* Rockham bay: *N.D.H.*—**C.** St. Stephens by Saltash; banks of the Fowey river. Mt. Edgcumbe!:

Balkw. Pendennis; Swanpool; Pennance, &c., "plentiful:" *Polytech.* 1856.

S. viscosus (L.)—*E.B.* 32.—Waste ground, rare.—**D.** Mortehoe: *Rav.* Side of South Devon railway, near Exeter: *Parf.* in *Rav.*

At the date of vol. ii. *Cyb. Brit.* (1849) Mr. Watson had no authority for the existence of this plant within the province of the Peninsula, which includes Somerset, Devon and Cornwall.

[* *S. squalidus* (L.)—*E.B.* 600. *S. chrysanthemifolius* DC. — Walls.—**D.** Bideford: *Bab. Man.* This station was known to the Rev. W. S. Hore in 1842 (*Phytol.* i. 163). According to Sir Wm. J. Hooker (*H.B.F.* 5th ed., 1842), the plant at that time had only been recently discovered in that locality by Mr. Forster. Mr. G. S. Gibson found it there in 1846 (*Phytol.* ii. 682.)]

"A south European species, said to be quite established on walls at Oxford, Bideford, Cork, and a few other localities in southern England and Ireland, but evidently not indigenous.—*B.B.F.*, p. 255.

S. erucifolius (L.)—*E.B.* 574. *S. tenuifolius* Sm. — Calcareous soils.—**D.** Waste ground and on rubble heaps from limestone quarries by the Plymstock and Yealmpton roads; Catdown: *Briggs* in *Phytol.* n.s. 369. About Exeter, "common" (Mr. Jacob): *Fl. Dev.* Near Braunton: *N.D.H.* Core-hill: *Fl. Sid.* St. Marychurch; Upton: *Stew.* in *Rav.*

I have no record of the occurrence of this species in Cornwall. Mr. Watson places its South limit, however, in that county (*Cyb. Brit.* ii. 115).

S. Jacobæa (L.)—*E.B.* 1130.—Waste ground.—**D.** ! Common.—**C.** Common. Road from Manarcan to St. Kevern: *Balkw.* *Ragwort.*

An "uncommon variety" of this species is said to grow on the Eastern Green, near Marazion (*M.H.C.* 1865, p. 316.)

S. aquaticus (Huds.)—*E.B.* 1131.—In wet and marshy places.—**D.** Frequent. Manadon wood, near Plymouth; Tavistock. Hartland; Heavitree; Forde bog: *Rav.* Ditches at Cockington: *Trim.*

MS. About Chudleigh: *J.B.T. Ap.* — **C.** Calstock; Lostwithiel. St. John's!: *Hore.* Swanpool marsh; College, &c., "plentiful:" *Polytech.* 1856. Road from Manarcan to St. Kevern; marsh, Rosenithon: *Balkw.*

Carlina Linn.

C. vulgaris (L.) — *E.B.* 1144. — Dry sandy heaths and sea-cliffs. — **D.** Frequent. Hoe, Plymouth; Bovisand!; Shaugh; near Brixham. Berry-head: *Trim.* MS. Chudleigh: *J.B.T. Ap.* About Torquay; Exmouth; Manaton; Ilfracombe: *Rav.* — **C.** Mount Edgecombe; Whitsand bay. Pendennis; Penance, &c., "not uncommon:" *Polytech.* 1856.

Arctium Linn. Burdock.

A. majus (Schk.) — Waste places. — **D.** Uncommon about Plymouth. It has been found by Mr. Briggs in a waste spot by the Plymouth and Totnes road, near Yealm bridge; and near Brixton, by the Plympton road.

A. minus (Schk.) — *E.B.* 1228. — Waste places. — **D.** Common. Often with white flowers. Plympton; Wembury; Tavistock. About Elburton; Stadiscombe, &c.: *Briggs.* — **C.** Maker; Antony passage; Calstock. Bar, &c. [Falmouth], "not common:" *Polytech.* 1856.

In the Report of the London Botanical Exchange Club for 1867, the *Arctium eu-minus* of Syme's Eng. Bot. is recorded as found by Mr. T. R. A. Briggs at Elburton, Devon.

A. intermedium (Lange). *A. pubens* Bab. — Waste places. — **D.** Unreported. — **C.** Near St. Kevern: *Balkw.* Common [about Falmouth]: *Polytech.* 1856. Scilly islands: *Towns.* in *Journ. Bot.* ii. 113.

In his MS. notes on the Flora of Torquay, with which Dr. Trimen has kindly furnished me, he says that he saw (in 1864) only one form of *Arctium* in that neighbourhood, viz., the *A. pubens* of Prof. Babington.

Serratula Linn. Saw-wort.

S. tinctoria (L.)—*E.B.* 38. — Groves and thickets. — **D.**! Frequent. Manadon wood, near Plymouth; Tavistock. Near Teignmouth: *Jord.* in *Phytol.* 1843, p. 828. Torquay; Ilsham: *Park.* in *Rav.* Berry-head: *Trim.* MS. Stoke wood, near Exeter: *Parf.* in *Rav.* St. Marychurch; Ilsington; Holne chase; Ashburton; Bovey Heathfield; Chudleigh, &c.: *Fl. Dev.* Ilfracombe; Clovelly; Lyme-mouth: *Rav.* Also collected in the last-mentioned place by Mr. T. Clark: *Phytol.* 1852, p. 743. Near Southcott, N.D.: *Maw* ib. 1853, p. 793.—**C.** St. Kevern: *Balkw.* Hedges [about Falmouth], “plentiful:” *Polytech.* 1856. Goonhilly downs: *J.B.T.*

Centaurea Linn. Knapweed.

C. nigra (L.)—Heads globose, sometimes radiant.—*E.B.* 278.— Meadows and pastures. — **D.**! Common, both forms. Abundant about Plymouth; the radiant variety in quarries near Saltram. With white flowers near the Kingsbridge railway station: *Parf.* Teignmouth (radiant form): *Jord.* in *Phytol.* 1843, p. 828. Torquay (“almost always rayed”): *Trim.* MS.—**C.** Common. *Black Knapweed.*

— **β.** *C. decipiens* (Thuill.) *C. nigrescens* (Bab.) — **D.** Hele strand, near Ilfracombe: *N.D.H.* Common about Exeter: *War.* in *Rav.* Goodrington woods: *Park.* ib.—**C.** Near Budock bottoms; Pennance, &c., “not uncommon:” *Polytech.* 1856.

Dr. Trimen says this var. does not occur about Torquay.

C. Cyanus (L.)—*E.B.* 277.—Corn-fields.—**D.** Common. About Plymouth, but not plentiful. Lympstone; Exminster: *Parf.* Chudleigh: *J. B.T. Ap.*—**C.** Near St. John’s!. Near Liskeard: *Balkw.* “Found by Mr. Howard Fox near Glendurgan, rare:” *Polytech.* 1856. *Corn Bluebottle.*

C. Scabiosa (L.)—*E.B.* 56.—Fields and hedges.—**D.** Common. About Plymouth!; near King's Tamerton; Plymstock; Tavistock. Torquay: *Rav.* St. Marychurch; Warberry-hill; Meadfoot cliffs: *Tor. Fl.* Berry-head: *Trim.* MS. About Chudleigh: *J.B.T Ap.* Near Southcott, &c., N. D.: *Maw* in *Phytol.* 1853, p. 793.—**C.** Common about Falmouth; a variety with white flowers at St. Anthony: *Polytech.* 1856. *Great Knapweed.* *Matfellow.*

C. Calcitrapa (L.)—*E.B.* 125.—Gravelly and sandy places.—**D.** Exmouth sands: *Fl Dev.*—**C.** Castron (H. S. Herb): *Miss E. Stackhouse.* Mr. F. P. Pascoe includes it in his list of Cornish plants (*Cyb. Brit.* iii. 457)

Onopordum *Linn.* Cotton Thistle.

O. Acanthium (L.)—*E.B.* 977.—Waste ground.—**D.** Ivybridge: *Miss L.* Meadfoot, near Torquay: *Stew.* in *Rav.* North Devon [? about Ilfracombe]: *N.D.H.*—**C.** "Found by Mr. W. P. Cocks near Trescobeas:" *Polytech.* 1856.

I find in my notes "Catdown, Plymouth," as a locality for this plant. I, however, distrust the entry, and therefore discard it, especially as there appears to be not a little doubt as to whether the species really occurs in our district. My esteemed friend, Mr. T. R. A. Briggs, who is a careful observer, tells me that he has never seen it in the neighbourhood of Plymouth. In Mr. Watson's "Additional Notes" (*Cyb. Brit.* iii. 456), is the following remark:—"Mr. Pascoe has seen a specimen of this species, which was said to have been picked in Cornwall, where he supposes its true nativity to be somewhat doubtful."

"Although generally selected to represent the Scotch heraldic Thistle, certainly not wild in Scotland."—*B.B.F.* p. 265.

Carduus *Linn.* Thistle.

C. nutans (L.)—*E.B.* 1112.—Waste ground.—**D.** Frequent. Townsend-hill, Plymouth (1852); Long-bridge, Crabtree, near Plymouth; near Leigham, banks of the Plym; near Wembury; Pamflect, Plymstock. Berry-head, Torquay, and St. Marychurch:

Stew. in *Rav.* Exeter: *Parf.* ib. About Chudleigh: *J.B.T. Ap.* — **C.** Whitsand bay; between Penzance and Marazion; Looe. "Plentiful on the coast near the lighthouse [Falmouth], but not so common about Falmouth:" *Polytech.* 1856. *Musk Thistle.*

C. crispus (L.)—*E.B.* 973. *a.* *C. crispus* (L.)—Dry banks and waste places. — **D.** "Wild in many places on the limestone between Plymouth and Yealm-bridge, but very rarely occurs elsewhere about Plymouth: *Briggs* MS. Torquay; Cockington; Paignton: *Trim.* MS.—**C.** Near Bolleit: *J.B.T.*

— *β.* *C. acanthoides* (L.) — *E. B.* 973.—Same situations as the type.—**D.** Not common. Pasture near Yealmpton, and elsewhere in that neighbourhood: *Briggs* in *Phytol.* n. s. iv. 383. Chudleigh; Ilsington, &c.: *Fl. Dev.* Washfield, near Tiverton: *Mack.* in *Rav.* Watcombe: *Tor. Fl.*—**C.** Near Anthony (1852). *Wetted Thistle.*

C. tenuiflorus (Curt.)—*E.B.* 412.—Sandy and gravelly places near the sea. — **D.** Hoe, and under the Citadel, Plymouth, in which situations the var. *C. pycnocephalus* Jacq. (*C. tenuiflorus* *δ. elongatus* Dub.) also occurs; Wembury. Anstice cove: *Lees* in *Phytol.* 1851, p. 241. Babbicombe down; Berry Pomeroy castle; Watcombe: *Tor. Fl.* Brixham; St. Marychurch; Lympstone; Ilfracombe: *Rav.* Southernhay field, Exeter; Teignmouth, &c.: *Fl. Dev.*—**C.** Between Fowey and St. Austle: *J.B.T.* Near Marazion: *Gils.* in *Phytol.* 1846, p. 677. Plentiful near the sea, Falmouth: *Polytech.* 1856. Near Rame: *Briggs* MS. *Slender-flowered Thistle.*

C. lanceolatus (L.)—*E.B.* 107.—Waste ground. — **D.** Common. Mutley and Laira, Plymouth; Plymstock. Tamerton Foliot; Buckland Monachorum down, &c.: *Briggs* MS. About Chudleigh: *J.B.T. Ap.* — **C.** Common [about Falmouth]: *Polytech.* 1856. *Spear Thistle.*

C. eriophorus (L.) — *E.B.* 386 — Waste ground on a limestone soil.—**D.** Frequent. Near Devil's-point, Stonehouse: *Mr. Gissing in Rav.* Brixham: *J.B.T.* Chudleigh: *ib. Ap.*—**C.** Near Truro: *Wats. MS. and B.G.* *Woolly-headed Thistle.*

C. arvensis (Curt.) — *E.B.* 975. — **D.** Frequent. Mutley and Crabtree, Plymouth; Plymstock; Tavistock. Compton Gifford; Walkhampton, &c.: *Briggs MS.* About Chudleigh: *J.B.T. Ap.* — **C.** Near Millbrook; Calstock. Fields and road-sides, very common [about Falmouth]: *Polytech.* 1856. *Creeping Thistle.*

—— *β. setosus* (*Cir. setosum* M.B.) is inserted in *Rav.* on the authority of Mr. G. Parfitt as occurring in Devon. May not this be an error, as, according to *Bab. Man.*, its only recorded habitats are Culross and Kirkwall, Scotland?

C. palustris (L.) — *E. B.* 974. — Wet meadows and borders of streams.—**D.** Common. Plymouth; Wembury; Bickleigh; Tavistock. Ivybridge: *Miss L.* Exeter: *Parf. in Rav.* "Very common in moist situations [Torquay]:" *Tor. Fl.* About Chudleigh: *J.B.T. Ap.* Ilfracombe: *N.D.H.*—**C.** Calstock. Common [Falmouth]; var. *fl. alb.*, Breambay, &c., rare: *Polytech.* 1856. *Marsh Plume-thistle.*

C. pratensis (Huds.) — *E.B.* 177. *Cir. anglicum* Lam.—Boggy meadows.—**D.** Woodbury-hill, and about Lymptone (Rev. J. Jervis): *Fl. Dev.* St. Marychurch; moist meadows, near Torre abbey: *Tor. Fl.* Between Southmolton and Bampton: *Rav.*—**C.** Unreported. *Meadow Plume-thistle. Ground-Thistle.*

Mr. H. C. Watson says (*Cyb. Brit.* ii. 82) "probably the southern limit is in Cornwall, though I have no note of any locality in that county; and, indeed, as the species appears to be more eastern than western in its distribution, there is some chance that Cornwall may be really without this species."

C. acaulis (L.)—*E.B.* 161.—Dry calcareous pastures.—**D.** Pinhay cliffs, near Lyme (Mr. Jacob); downs near Torquay (Rev. A. Neck):

Fl. Dev. "Babbicombe and Ilsham¹ downs formerly, but not met with for the last two or three years:" *Tor. Fl.* 1860.—**C.** No record of its presence there. *Dwarf Plume-thistle.*

I doubt the propriety of retaining this as a Devonshire plant. Although the localities named are given on reliable authority, yet there is no confirmation of them by recent collectors.

Mr. H. C. Watson gives Devon as the South limit of this species, but with hesitation. *Vide Cyb. Brit.* ii. 84.

***Silybum Gaert.* Milk Thistle.**

† *S. marianum* (Gaert.)—*Carduus* Sm., *E.B.* 976.—Waste places.—**D.** Maristow (1851). Chudleigh rocks; Bovey Heathfield; Topsham; Seaton; rocks at St. Marychurch (Rev. A. Neck); fields at Lower Wear, near Topsham: *Fl. Dev.* Ilfracombe: *Rav.* Rocky valley; Babbicombe; Watcombe: *Tor. Fl.*—**C.** St. Anthony (H. S. Herb.): *Mr. W. Lobb. Milk Thistle. Mary's Thistle.*

A few years since some fine specimens were grown in the shrubbery bordering the Hoe, Plymouth. Hybrids with slightly white-veined leaves are still to be seen on the rocks below.

It was also observed by Mr. T. R. A. Briggs a few years ago in a field close to Egg-buckland village; but its appearance was only casual.

This plant is remarkable for the milky veins on its leaves. "A drop of the Virgin Mary's milk was considered to have produced these white veins, as that of Juno was fabled to be the origin of the milky way" (*H. B. F.*)

***Lapsana Linn.* Nipplewort.**

L. communis (L.)—*E.B.* 844.—Waste and cultivated land, hedges.—**D.** Common. Plentiful about Plymouth; Bickleigh; Tavistock. Torquay: *Tor. Fl.*—**C.** Between Torpoint and St. John's; Calstock; St. Stephens by Saltash. Common, Falmouth: *Polytech.* 1856. Frequent throughout the county.

***Arnoseris Gaert.* Swine's Succory.**

A. pusilla (Gaert.)—*Lapsana* Sm., *E.B.* 95.—Gravelly and sandy

¹ The habitats indicated, I presume, by Rev. A. Neck.

fields, rare.—**D.** Unreported.—**C.** Reported to occur in the county in Mr. Pascoe's list of plants furnished to Mr. H. C. Watson.

It has I fear slender claims to a place in our Flora ; but as the mention of it in this place may incite some zealous botanist to search for it, I have not rejected it.

Cichorium *Linn.* Succory. Chicory.

C. Intybus (L.)—*E.B.* 539.—Waste places on a gravelly or calcareous soil.—**D.** Not common. Crabtree and Laira, near Plymouth ; near Noss-Mayo (1866). Between Bideford and Northam : *Maw* in *Phytol.* 1853, p. 793. About Paignton,¹ Brixham,¹ and Kingskerswell (Rev. A. Neck) ; Teignmouth den ; Chudleigh ; Ilsington : *Fl. Dev.* Starcross and Powderham : *Parf.* in *Rav.* Between Braunton and Saunton-court : *Rav.* Side of the lane leading to Forde bog, near Newton.—**C.** Near Maker heights (1862) ; near Calstock (1863) ; between Penzance and Marazion (1864). Corn-fields, &c., St. Kevern ; Constantine : *Balkw.* Bude : *Miss H.* (1850). "Corn-fields, not uncommon, [Falmouth] : " *Polytech.* 1856. Mr. Briggs has seen it at the last-named place.

Hypochœris *Linn.* Cat's-ear.

H. glabra (L.) — *E.B.* 575. — Sandy and gravelly places. — **D.** Torquay : *Stew.* in *Rav.* (Not included in Stewart's *Tor. Fl*) — **C.** Unreported.

"South limit in Devon."—*Cyb. Brit.* ii. 39.

H. radicata (L.) — *E.B.* 831. — Waste ground. — **D.** Common everywhere.—**C.** Equally common. A white-flowered var., "rare," has been found by Mr. W. P. Cocks : *Polytech.* 1856. *Long-rooted Cat's-ear.*

H. maculata (L.)—*E.B.* 225.—Chalky and limestone hills.—**D.** Lynton : *Rav.* *Vide* doubts respecting this locality in *Phytol.*

¹ The localities of Paignton and Brixham were corroborated by Dr. H. Trimen in 1864.

n.s. iv. 248.—**C.** Lizard!: *Hore* in *Phytol.* 1842, p. 163. Kynance (H. S. Herb.): *Johns*.

In his "Additional Notes" (*Cyb. Brit.* iii. 451), Mr. H. C. Watson says that "Province 1 [the Peninsula] may now be admitted in the true area of this oft-mistaken plant. Mr. Pascoe intimates that he has seen it in Cornwall; and Mr. Gibson writes me that he had no doubt about the species having been seen there by himself."

In reference to the distribution of this species, Mr. Bentham says (*Brit. Fl.* 273),—"Rare in Britain, the only reliable localities being in Suffolk, Cambridgeshire, and North Wales." He will perhaps feel justified in extending its area in a future edition.

Thrincia Roth.

T. hirta (DC.) — *E.B.* 555. — Gravelly places and fields. — **D.** Townsend hill and under the Citadel, Plymouth! (1852); Bickleigh (1862); Saltram (1863); near Knackersknowle (1865). "Neighbourhood of Torquay,¹ &c.:" *Tor. Fl.* — **C.** Near Calstock; between Cawsand and Rame. Old walls and gravelly fields [Falmouth], "common:" *Polytech.* 1856.

***Apargia Schreb.* Hawkbit.**

A. hispida (Willd.) — *E.B.* 554. *Leontodon* L. — Meadows and pastures. — **D.** Lophill!, near Maristow, Roborough; Tavistock. In a pasture below Brent-tor, near Tavistock; Jump (now Roborough); near Knackersknowle: *Briggs* MS. Near Teignbridge; sands at Exmouth (Mr. Jacob): *Fl. Dev.* Ilfracombe: *Rav.* Frequent about Torquay: ² *Tor. Fl.* — **C.** Between Torpoint and St. John's (1864). Bank near Pennance mills, "rare:" *Polytech.* 1856. *Rough Hawkbit.*

¹ The specimens in the Torquay Museum labelled "*T. hirta*, Torquay, 1847," are *Apargia autumnalis*.—*Dr. Trimen* MS.

² In 1864 Dr. Trimen corroborated the Torquay habitat, but he found that *Hypochaeris radicata* represented this species in the Torquay Museum.

*A. autumnalis*¹ (Willd.)—*E.B.* 830. *Leontodon* Koch.—Meadows and pastures.—**D.** Common. About Plymouth it is abundant; Roborough down! (1861). Near Barton: *Tor. Fl.* “Everywhere” [in the neighbourhood of Torquay]: *Trim. MS.*—**C.** Between Penzance and Marazion (1864). Falmouth, “plentiful:” *Polytech.* 1856.

—*β. A. Taraxaci* Sm., *E.B.* 1109, is mentioned in Ravenshaw’s List, on the authority of Mr. C. Eyre Parker, as found upon downs about Torquay and St. Marychurch; but Dr. Trimen makes no allusion to it in his notes, which circumstance induces me to look with suspicion on the record.

Tragopogon Linn. *Goat’s-beard.*

T. minor (Fries).—*T. major* Hook (not *Jacq.*).—Meadows and pastures.—**D.** Teignmouth: *Jord. MS.* “Frequent:” *Rav.*—**C.** Unreported.

This seems scarcely worthy of being separated as a species from the next.

T. pratensis (L.)—*E.B.* 434.—Meadows, pastures, and occasionally in waste ground.—**D.** Not unfrequent. Embankment, Chelson meadow, on the side of the carriage-drive to Saltram, but whether or not truly indigenous there admits, I think, of doubt; foot-path, Queen Anne’s battery, Plymouth (July, 1868). Catdown quarries, Plymouth (Rev. J. S. Tozer); glacis of Devonport fortifications: *P. & D. Fl.* Near Bishopsteignton: *Jord. in Phytol.* 1843, p. 828. Between Bideford and Southcott: *Maw ib.* 1853, p. 793. Side of the canal, Exeter: *Parf. MS.* Chudleigh; Ilsington; Totnes; banks of the Exe below Exeter; Teignbridge, &c.: *Fl. Dev.* In the neighbourhood of Torquay: *vide Tor. Fl.* for exact spots.—**C.** About Maker (Mr. Sconce): *P. & D. Fl.* Cardynham (H. S. Herb.): *Mrs. T. Grylls.* “One plant only near Ashfield; very rare [about Falmouth]:” *Polytech.* 1856. *Yellow Goat’s-beard. Meadow Salsify.*

¹ Specimens in the Torquay Museum so labelled are small plants of *Crepis virens*.—*Dr. Trimen MS.*

* *T. porrifolius* (L.)—*E.B.* 638.—Moist meadows. — **D.** Some fifteen years since, or more perhaps, there were several plants growing in the grass-plot in front of one of the houses in Devonshire-terrace, Plymouth. Extinct in 1863 — perhaps before. Waste ground, Plymouth : *Bartl.* MS. notes, *vide ante*. Beer church-yard : *Hore* in *Phytol.* 1842, p. 163. Banks of the Tavy : *W.D. & C.Fl.* Beeralston! : *Jac.* Plymstock (Dr. Hamilton); edge of the weir, head of the Tamar (Dr. Mc. Ilroy); rare : *P. & D.Fl.* Cliffs between Exmouth and the lime-kiln : *Warr.* in *Rav.* Exminster : *Parf.* MS. Braddon's-hill, ¹ Warberry-hill, and Park-hill, Torquay : *Park.* and *Stew.* in *Rav.*—**C.** “Parish of St. Just, found by Mr. Lovell Squire; very rare :” *Polytech.* 1856. *Salsify.* *Purple Goat's-beard.*

Mr. H. C. Watson questions whether this species extends so far South as Cornwall. He says it is native or established about the coasts of the southern provinces. *Vide* Cyb. Brit. ii. 34.

Picris *Linn.*

P. hieracioides (L.)—*E.B.* 196.—Dry banks. — **D.** Frequent. Catdown quarries (1848). ² Cliffs, Teignmouth : *Jord.* in *Phytol.* 1843, p. 828. Crabtree, near Plymouth; by the Plymouth and Yealmpton road, common; between Berry-narbor and Combe-martin : *Briggs* MS. Mudstone cliffs; Cockington lanes : *Park.* in *Rav.* Meadfoot cliffs and Lincombe-hill; roadsides about Torquay : *Tor.Fl.* Oddicombe beach; Brixham; Paignton; *Trim.* MS. Lynton : *N.D.H.*—**C.** Waste ground near Helford river; “rare :” *Polytech.* 1856. *Hawkweed Ox-tongue.*

Helminthia *Juss.* Ox-tongue.

* *H. echinoides* (Gaert.)—*E.B.* 972.—Dry banks. Partial to calca-

¹ A specimen from this locality (coll. *Park.*) is in the Torquay Museum.

² Two or three years before, I found this plant on some heaps of chalk and lime rubble in the yard of the Paint-works then at Coxside, Plymouth.

reous soils. — **D.** Catdown quarries, Crabtree, and elsewhere about Plymouth, not rare; between Hooe and Wembury!; near Salcombe. Ermington; between Plymouth and Saltash ferry, &c.: *Briggs* MS. Cliffs at Exmouth (Mr. Jacob); Courtland-lodge, near Exmouth (Miss Filmore); road between Totnes and Stoke Gabriel; Ulsington: *Fl. Dev.* Cliffs by the side of the new road, Torquay; Babbicombe [seen there by Dr. Trimen in 1864]: *Tor. Fl.* Brixham: *Miss L.* Teignmouth: *Jord.* Paignton; Totnes, &c.: *Trim.* MS. Lynton; Ilfracombe; Mortehoe: *Rav.* Tiverton: *Mack.* in *Rav.* — **C.** Penzance: *Gibs.* in *Phytol.* 1846, p. 678. Waste places, Falmouth, “not uncommon:” *Polytech.* 1856.

Lactuca *Linn.* Lettuce.

L. virosa (L.)—*E.B.* 1957.—Dry banks. — **D.** Unrecorded.¹ — **C.** In Mr. Pascoe’s marked catalogue furnished to Mr. H. C. Watson it is “reported” for this county.

“South limit in Somerset.”—*Cyb. Brit.* ii. 41.

Leontodon *Linn.* Dandelion.

L. Taraxacum (L.)—*a. L. Taraxacum* (Sm.) *E.B.* 517.—**D.** and **C.** Very common.

— *δ. L. palustre* (Sm.)—*E.B.* 553.—In bogs or damp places. — **D.** Near Teignbridge; Exmouth; Black-hill, near Woodbury: *Fl. Dev.* — **C.** A specimen collected in this county by *Mrs. T. Grylls* is in H. S. Herb.

Sonchus *Linn.* Sowthistle.

S. oleraceus (L.)—*E.B.* 843.—**D.** and **C.** Common in fields and waste places. *Sowthistle.* *

¹ It was erroneously included in a “List of Plants Indigenous to Plymouth and its Neighbourhood,” compiled by myself and published in the *South Devon Literary Chronicle* a few years since; from which list Mr. Ravenshaw transferred it to his pages. *Delendum.*

S. asper (Hoffm.)—*E.B.S.* 2765, 2766.—**D.** and **C.** Frequent in cultivated ground and waste places. *Southistle*.

S. arvensis (L.)—*E.B.* 674. — Fields and waste ground. — **D.** Frequent. I have seen very luxuriant specimens on the borders of the salt-water ditch at Laira, near Plymouth; Bickleigh. Warberry hill, Torquay, &c.: *Tor. Fl.* — **C.** Near Cawsand. Cornfields, common [*Falmouth*]: *Polytech.* 1856.

S. palustris (L.)—*E.B.* 935.—Marshes, “very rare” (*Bab. Man.*) —**D.** Side of the Exe, near Powderham (Mr. Jacob): *Fl. Dev.* Bridgetown marsh: *Fl. Tot.*—**C.** *Tall Marsh Southistle*.

It is marked with the doubtful “o” for Devon in *C.B.S.* Hence suspicion falls on the Bridgetown habitat, however readily we may accept that of Mr. Jacob. It is not unlikely that *S. arvensis* may have been mistaken for this species.

Mr. Bentham says (*Brit. Fl.*) that this plant is very rare in Britain, “the only certain localities being in the marshes of some of the eastern counties of England.”

Crepis Linn. Hawk’s-beard.

C. taraxacifolia (Thuil.)—*E.B.S.* 2929. — Limestone districts. —**D.** Near Plymouth: *Briggs* in *Report of Lon. Bot. Exchange Club*, 1867.

C. virens (L.)—*C. tectorum* Sm. (*not* Linn.) *E.B.* 1111. — **D.** and **C.** Common.

C. paludosa (Moench).—*Hieracium* Sm., *E.B.* 1094. — Damp woods and shady places.—**D.** Near Ulfracombe: *Rav.*

Branded with the suspicious “o” for Devon in *C.B.S.* Corroboration of its existence in the habitat named would therefore be acceptable.

According to Mr. Bentham (*Brit. Fl.* 279) this species “extends all over Scotland, and Southward into the *central* counties of England, and into South Wales, and is not rare in Ireland.”

Hieracium Linn. Hawkweed.

H. Pilosella (L.)—*E.B.* 1093. — Dry banks. — **D.** and **C.** Common. *Mouse-ear Hawkweed*.

[* *H. aurantiacum* (L.) appears in *Rav.* under protection of a (?) as gathered by Mr. Stewart in a hedge between East-down and Sherwell; but I think we must omit it from our list, as it is only known as a naturalized plant in woods and wastes in the North. *Vide* Bab. Man.]

H. murorum (L.)—Woods and rocks. — **D.** High-tor [Heytor] rocks; rocks near Dunsford (Mr. Jacob): *Fl. Dev.* Ilfracombe: *Stew.* in *Rav.*

H. vulgatum (Fr.) — *H. sylvaticum* Sm., *E.B.* 2031. — Woods, banks, walls. — **D.** Chagford; Clovelly; Harpford woods: *Rav.* It is known to Mr. H. C. Watson as a native of Devonshire: *C.B.S.* i. 61.—**C.** Budock bottoms, “rare:” *Polytech.* 1856.

H. maculatum Sm., *E.B.* 2121, which is a form of the last-mentioned species, has been found by Mr. T. R. A. Briggs under trees at Manadon, near Plymouth. He thinks it probably an escape. *Vide* Phytol. n.s. v. 370.

H. tridentatum (Fr.)—Banks.—**D.** Appears in *C.B.S.* i. 61, as a native of this county. I have no other information concerning it.

H. umbellatum (L.)—*E.B.* 1771.—Sandy and stony places, woods. —**D.** Frequent. Woods about Plymouth; Wembury; Tavistock. About Tiverton; Dartmouth castle; Holne-chase; Dean-burn, near Ashburton; Buckland and Spitchwick woods; Beckey fall; woods at Ilsington; Fingle bridge, near Drewsteignton; Bridford woods: *Fl. Dev.* Upton Pynes; Stoke wood, near Exeter; Mortehoe; Clovelly: *Rav.* Ivybridge; Gidleigh, near Chagford: *Tor. Fl.*—**C.** Penzance: *Gibs.* in *Phytol.* 1846, p. 678. St. Kevern (H. S. Herb): *Johns.* Gravelly hedges [Falmouth], “not uncommon:” *Polytech.* 1856. *Narrow-leaved Hawkweed.*

H. boreale (Fr.) — *H. sabaudum* Sm., *E.B.* 349.—Banks.—**D.** Woods at Ilsington; hedges at Tiverton, North Bovey, Hennock, and Manaton: *Fl. Dev.* Clovelly: *Rav.* Ilfracombe and Trentis-

hoe: *Stew. ib.* Recognised as Devonian in *C.B.S.*—**C.** Hedge near Union-house [Falmouth], “rare:” *Polytech.* 1856. *Shrubby Hawkweed.*

A variety of the last-mentioned species, discovered by Mr. E. Parfitt, August 20th, 1854, in Stoke wood, near Exeter, is described in *Rav.* p. 40.

(*To be continued.*)

PLYMOUTH :
PRINTED BY I. W. N. KEYS AND SON,
BEDFORD STREET.





3 0112 105615402